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BHARTṚHARI AS A MIMĀMSAKA*

By

V. A. Ramaswami Sastri

It has already been proved beyond doubt[1] that Bhartṛhari, the author of *Vākyapadīya* and a Commentator on Patañjali's *Mahābhāṣya*, is not a Buddhist and that he is one of the pre-eminent pre-Śaṅkara monists. It is now proposed to elucidate in this paper that he is an eminent Mīmāṁsaka too in the sense that he has introduced most of the rules of interpretation laid down in *Pūrvamīmāṁsā-śāstra* to the Paniniyan system of Sanskrit Grammar. A few scholars however believe[2] that he is the author of a *vṛtti* on *Pūrvamīmāṁsāśāstra*. It is not so far available and it is premature to say anything on it. Suffice it to say that he has well understood the well-known rules and interpretation in P. M. Śāstra which are so general in character that they can be well applied not only to the *Vedas* and *Smṛtis* but to all other *śāstras*, particularly the *vyākaraṇaśāstra* which is the foremost of all *Vedāṅgas* and an important *Smṛti* also. In the second *kāṇḍa* of his *Vākyapadīya* generally known as *Vākyakāṇḍa* Bhartṛhari explains the chief doctrines of P. M. Śāstra in a few verses—79 to 83[3] from *prasaṅga* to *bheda* omitting the

* Submitted to the Indian Linguistic Section of the All-India Oriental Conference held at Ahmedabad in 1953.

1. *Vide* the writer's papers, "*Was Bhartṛhari a Bauddha!*" and "*Bhartṛhari as a Pre-Śaṅkara Advaitin,*" contributed to the Mysore and Trivandrum sessions of All India Oriental Conference.

2. *Vide Śāstradīpikā* 'तथा च हरिनिरुक्तम् (हरिभिरुक्तम्)—'प्रधानस्य मरणेनार्थिन इज्यां प्रवर्तयन्ति'। X. 2-23 (57-58). N. S. Edition, p. 673.

3. 'प्रासङ्गिकमिदं कार्यमिदं तन्त्रेण लभ्यते ।
इदमावृत्तिभेदाभ्यामत्र बाधासमुच्चयौ ॥
ऊहोऽस्मिन्विषये न्याय्यः संबन्धोऽस्य न बाध्यते ।
सामान्यस्यातिदेशोऽयं विशेषोऽत्रातिदिश्यते ॥
अर्थित्वमत्र सामर्थ्यमस्मिन्नर्थो न भिद्यते ।
शास्त्रात्प्राप्ताधिकारोऽयं व्युदासोऽस्य क्रियान्तरे ॥
इयं श्रुत्या क्रमप्राप्तिरियमुच्चारणादिभिः ।
क्रमोऽयमत्र बलवानस्मिंस्तु न विवक्षितः ॥
इदं पराङ्गैः संबद्धमङ्गानामप्रयोजकम् ।
प्रयोजकमिदं तेषामत्रेदं नान्तरीयकम् ॥
इदं प्रधानं शेषोऽयं विनियोगक्रमस्त्वयम् ।
साक्षादस्योपकारीदमिदमाराद्विशेषकम् ॥
शक्तिव्यापारभेदोऽस्मिन्फलमत्र तु भिद्यते ।
संबन्धाज्जातभेदोऽयं भेदस्तत्राविवक्षितः ॥

[*Vākyapadīya*, Kāṇḍa II. Verses 77, p. 3.]
(Banaras Edition, 1887, p. 100).

contents of the first *adhyāya* dealing with the *pramāṇas* on *dharma*—the *vedas*, *smṛtis*, *ācāras*, etc. These verses and a few subsequent verses also emphasize the importance and permanence of a *pada* in a sentence in the interpretation of their meanings. This, however, proves the reality of the *pada*[4] rather than the reality of the *vākya*. Bhartṛhari, a monist and a believer of the reality of *akhaṇḍa-vākyasphoṭa*, accepts the empirical reality of *padas* also; and so what has been said by the *padavādin* is acceptable to the *vākyavādin* in the interpretation of the *padas* and the *vākyas*.

The Commentator Puṇyarāja (while explaining these verses) says that Bhartṛhari while commenting on these verses, has observed[5] that he himself has dealt with these topics in detail in the *lakṣaṇasamuddeśa* of the *padakāṇḍa* (the third kāṇḍa) and deplores that this *Samuddeśa* has been lost to posterity by the carelessness of the people in the preservation of the old texts or by the callous indifference and ignorance of the scribes. It is proposed here to elucidate on the basis of Puṇyarāja's Commentary on these verses how Bhartṛhari has applied the main rules of interpretation of P. M. Śāstra to the *Vyākaraṇaśāstra*. Most probably Puṇyarāja's commentary on these verses is based on Bhartṛhari's commentary thereon.

Puṇyarāja first gives a summary of the contents of the *Dvādaśalakṣaṇī*. The rules or *nyāyas* are called *lakṣaṇas*[6] in the sense that they help much in the interpretation and understanding of the true import of the sentence. They are described as *six*, *twelve* and *twenty-four*, *six* taking the first *six* chapters dealing *upadeśa*,

4. *Vide*, *ibid*, verses 87 & 88.

इति वाक्येषु ये धर्माः पदार्थोपनिवन्धनाः ।
सर्वे ते न प्रकल्पे(ल्प्ये?)रन् पदं चेत्स्यादवाचकम् ॥
अविभक्तेऽपि वाक्यार्थे शक्तिभेदादपोद्धृते ।
वाक्यान्तरविभागेन यथोक्तं न विरुध्यते ॥

Vide also Puṇyarāja's commentary on verses 87 & 88.

'अनंशे वाक्येऽभ्युपगम्यमाने वाक्येषु पदसमुदायरूपेषु सत्यपदार्थोपनिवन्धनेषु ये धर्मा वाक्यार्थानुग्राहिणः शब्दार्थविशेषसंप्रत्ययप्रतिवद्धास्ते सर्वेऽत्राविद्यमानोद्देशप्रविभागेन प्रतिष्ठां लभेरन् यदि सत्यं पदं वाचकं न स्यात् इति पदवादी प्रत्यवतिष्ठते'। (verse 87, p. 120)

'एवं पदवादिना अखण्डवाक्यवादिनो दूषणजाते समापिते इदानीमेतत्समाधातुमखण्डवाक्यवाद्याह—**अविभक्तेऽपीति**। एतत्सर्वं यथोक्तमस्मत्पक्षे न विरुध्यते। तथाचास्मत्पक्षे अविभक्ते निर्विभागे वाक्यार्थे एकस्मिन्पानकरसादिवत्समाश्रीयमाणे शक्तिभेदसमाश्रयणेन चापोद्धृते कृतापोद्धारे सत्यवान्तरवाक्यार्थोपजननात्सर्वमेतत्सिद्ध्यतीति तात्पर्यम् ॥ (verse 88, p. 120).

5. 'एतेषां च वितत्य सोपपत्तिकं सनिदर्शनं स्वरूपं पदकाण्डे लक्षणसमुद्देशे विनिर्दिष्टमिति ग्रन्थकृतैव **स्ववृत्तौ** प्रतिपादितम्। आगमभ्रंशाल्लेखकप्रमादादिना वा लक्षणसमुद्देशश्च पदकाण्डमध्ये न प्रसिद्धः' (Puṇyarāja's commentary, p. 101).

6. 'एतैश्च निर्ज्ञातैः वाक्यगोचरोऽर्थात्मा यथावल्लक्ष्यते निश्चीयते इत्येतानि मीमांसकैर्लक्षणानीत्युच्यन्ते।' (*ibid*, p. 101).

twelve, taking the *twelve* chapters based on *upadeśa* and *atideśa* and *twenty-four* taking the exceptions also of each main topic.[7]

The first six chapters are called *upadeśādhyāyas*. The first chapter mainly deals with the vedas and smṛtis, the chief authority on *dharma*; the second explains *bheda*—distinction between one *dharma* and another; the third, *śeṣaśeṣibhāva*—the relation between the chief and the accessory; the fourth, *prayukti*—the relation between the condition and the conditioned; the fifth, *krama*—sequence between one karma and another in their performance; the sixth, *adhikāra*—the qualification of the chief performer and his assistants in the performance of the sacrifices. The chapters 7 to 10 called *atideśādhyāyas* deal with (a) *Sāmānyātideśa*—anological application in general (*i.e.*) the accessories of the model sacrifice are to be transferred to another on the basis of some similarity; (b) *Viśeṣātideśa*—the details of analogical application (*i.e.*) which sacrifice is the model and which is its imitation etc.; the ninth *Ūha*—the substitution of words (or *saṁskāras*) in a *mantra* according to the context; the tenth, *Bādha*—the sublation of the original word in the mantra. The last two chapters deal with *tantra* and *prasaṅga* respectively—the *non-repeated performance* of one accessory in favour of more than one chief sacrifice and the *utility* of one accessory for another by *accident*.

The exceptions of these topics are also explained then and there in those chapters. There is no exception for the authorities on *dharma* except that the *Śākya-smṛtis*, though they preach *ahiṁsā* and other vedic dharmas, are not accepted as authorities on the ground that they contain both good and bad instructions and as such, are unreliable. The *bheda* has got its exception in *abheda*—identity; so also the *aṅgāṅgibhāva*, *prayukti*, *adhikāra*, *atideśa* and *ūha* have their exceptions in their opposites under special circumstances. The *bādha* has got two exceptions—*samuccaya* and *vikalpa*—and *tantra* and *prasaṅga* have their exceptions in *āvṛtti* and *bheda*. These all are explained and illustrated in those chapters along with their opposites.

Prasaṅga is explained thus[8]: Of the two chief objects which require one accessory, one is enjoined as the *prayojaka* (condition) of the accessory and the other does not become the *prayojaka* but gets its service *without its repetition*. This is illustrated by a popular example. The teacher imparts[9] a lesson on Grammar mainly to one student whom he has accepted as his disciple but many others who are so qualified may accidently receive the same lesson along with his disciple.

7. *Ibid*, pp. 101-104.

8. 'द्वयोरर्थिनोः कार्येण संभविना प्रयोजकत्वेन निर्ज्ञातसामर्थ्ययोः यत्रान्यतरप्रयुक्तेनार्थेनापरोऽभिसंवध्यमानः कृतार्थत्वात्पृथक् प्रयोजकत्वं नोपैति स प्रसङ्गः' (*ibid*, p. 104).

9. 'तत्र हि कञ्चिदेव शिष्यमुद्दिश्य प्रवृत्तेऽध्यापने अभेदेनाध्यापनान्तरस्य प्रयोजने समर्थतरा अध्येतारः सत्यत्यर्थित्वे पृथगध्यापनं संभवाल्लाघवाच्च न प्रवर्तयन्ति ।' (*ibid*, p. 104).

This is by *prasaṅga*—accident. The vedic example for *prasaṅga* is[10] that the *prayājas* and *anuyājas* performed for *Agnīṣomīyapaśu* sacrifice are accidently helping the *paśu-puroḍāśa* sacrifice also so that there is no separate performance of these accessories in the *paśupuroḍāśa*. In the grammatical system[11] it is illustrated by the sūtra—'सर्वादीनि सर्वनामानि'. This sūtra enjoins *Sarvanāmasaṁjñā* to the words like *sarva* studied in that *gaṇa*; it also enjoins *incidentally* the absence of cerebralisation—*ṇatvābhāva*—to the first n in the name *sarvanāman*, on the strength of Pāṇini's usage.

Tantra is defined thus[12]: when the chief objects are numerous and when they want one accessory, it is to be got either by the repeated performance of one action or by a single performance of it; but the single performance of one action for the sake of more than one chief object is called *tantra*. It is illustrated by the popular example.[13] *viz.* the light in the hall which serves for not one single person (who studies vyākaraṇa) but for all alike. The vedic example[14] is the single performance of the five *prayājas* for a group of three sacrifices in the *Darśapūrṇamāsa*. In śāstra it is illustrated by the sūtra[15]—तपरस्तत्कालस्य where the word तपर includes both तः परो यस्य and तात्पर: that which follows *t* and that which is followed by *t*, in the examples—वृद्धिरादैच् and अदेङ्गुणः. So also in the sūtra enjoining *Saṅkhyāsaṁjñā*[16]—बहुगणवतुडतिसंख्या—the words *bahu* and *gaṇa* refer to not only those two words but also all numerals like *eka* by *tantra* on the basis of taking the name *saṅkhyā* as a *mahāsaṁjñā* and an *anvarthasaṁjñā* also.

The exception of *tantra* viz. āvṛtti (repetition) is illustrated by the popular example[17]: when it is said that a piece of cloth or ornament is to be given to the soldiers in the battlefield, it implies that each and every soldier is to be given a

10. 'अत्राग्नीषोमीयपश्वर्थः प्रयाजानुयाजविध्यन्तः प्रसङ्गादग्नीषोमीयं पशुपुरोडाशमप्युपकरोति।' (*ibid*, p. 104).

11. 'सर्वादीनि सर्वनामानी'त्यत्र णत्वाभावं प्रासङ्गिकमुदाहरन्ति। तत्रहि संज्ञासंज्ञिसंबन्धविधानपरे वाक्ये रूपविशेषमात्रादकृतणत्वादुभयसाधनत्वं विज्ञायते। शक्यो ह्यस्य स्वरूपनिर्देशात्पृथक् णत्वप्रतिषेधो वक्तुमित्येकेनैव प्रयत्नेनोभयत्र वर्तते।' (*ibid*, p. 104).

12. 'यत्रार्थिनः सर्वे प्रयोजकाभेदेनावृत्त्या वा योऽर्थः प्रतिपत्तव्यः तमर्थमेकमेव संभवाल्लाघवाच्च प्रयोजनान्वितं तन्त्रम्।' (*ibid*, p. 104).

13. 'शालायामेकं प्रदीपं व्याकरणाध्यायिनः प्रयोजयन्ति।' (*ibid*, p. 104).

14. 'प्रधानभूता ये षड्भागा आग्नेयादयः तदर्थं ये प्रयाजादयः ते पूर्वं पश्चाद्वा कृताः सर्वेषां तन्त्रेण साधारण्येनोपकारका भवन्तीत्युच्यते।' (*ibid*, pp. 104 & 105).

15. 'भिन्नार्थयोः तपरशब्दयोः तपरस्तत्कालस्येति तन्त्रिणोः सूत्र उपादानं क्रियत इति।' (*ibid*, p. 105).

16. 'संख्यासंज्ञायां रूपविशेषानुरोधात्तत्प्रदेशेषु तन्त्रेणैव युगपदुभयप्रतिपत्तिरिति।' (*ibid*, p. 105).

17. 'एकं वस्त्रमाभरणं वा रणभूमिषु भटानामुपयोगाय कल्पत इति।' (*ibid*, p. 105).

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piece of cloth or ornament. In the Vedas also the example[18]—सप्तदश सामिधेन्यो भवन्ति—implies that the number *seventeen* is to be acquired by the repetition of certain mantras, as found in the supplementary passages—त्रिः प्रथमामन्वाह, त्रिरुत्तमाम्—the first and the last *mantra* of the sāmidhenis are to be repeated thrice. In the V. śāstra it is explained in the sūtra[19]—इग्यणःसंप्रसारणम् which enjoins *samprasārana samjnā* to both the *vākya* and the *varna* in view of the fact that the sūtras 'ष्यङस्संप्रसारणम्' and संप्रसारणाच्च refer the *samprasāraṇasamjñā* in reference to a *vākya* and a *varṇa* respectively. This can be achieved only by *āvṛtti*. So also the word एकाच् in sūtras like एकाचो द्वे प्रथमस्य is to be taken as a *karmadhāraya* and a *bahuvrīhi*. This can be achieved by *tantra* in reference to the speaker but only by *āvṛtti* in reference to the hearer or knower.

Bheda is also spoken of as an exception of *tantra* and it is illustrated thus[20]: when people have to take their food on plates, each man is to be given a separate plate to take his food; and it does not mean that all people should take their food simultaneously on one and the same plate. This is by *bheda*. In the vedas the famous example—ग्रहं संमार्ष्टि enjoins the cleaning of the soma vessel by a cloth *daśāpavitra* and this cleaning is not to be done only in one graha but in all grahas; the singular number in the word ग्रहं is not to be taken into account—*avivakṣita*. Here it is not *tantra*, but *bheda*. In V. śāstra it is illustrated by the sūtra[22] 'नवेति विभाषा' which speaks of only the उभयत्रविभाषा. It speaks partly through a *vidhi* and partly through a *niṣedha* by the repetition of the optional rule. The sūtra 'विभाषा श्वेः' enjoins optionally *samprasāraṇa* to the root *śvi* in the perfect formations. Thus the third person dual and plural forms permanently get the *samprasāraṇa* rule—वचिस्वपियजादीनां किति— and this is made optional: hence *prāptavibhāṣā*—'निषेधमुखेन प्रवृत्तिः'. The singular number ṇal (the substitute of *tip*) which is pit and not kit, does not get *samprasāraṇa* by the above rule; so this rule optionally operated *samprasāraṇa*: hence aprāptavibhāṣā (विधिमुखेन प्रवत्तिः).

18. 'वेदे यथा—सप्तदश सामिधेन्यो भवन्तीति। अत्रैकशब्ददर्शने सामिधेनीषु सप्तदशत्वमावृत्तिसंख्यानात्प्रकल्प्यते। यदुच्यते—त्रिः प्रथमामन्वाह, त्रिरुत्तमामन्वाहेति।' (*ibid*, p. 105).

19. 'व्याकरणे यथा—संप्रसारणसंज्ञायां ज्ञापकपक्षानाश्रयणेन वर्णवाक्यविषयया आवृत्त्या कृत्स्नस्य भिन्नप्रतीयमानोपस्कारा प्रवृत्तिराख्यायते। यथाचैकशब्ददर्शने एकाजनेकाज्ग्रहणेषु चावृत्तिसंख्यानादिति।' (*ibid*, p. 105)

20. 'भिन्नानि पात्राण्यसहभुजां भुजिक्रियायां भेदेनाधिकरणभावं प्रतिपद्यन्ते।' (*ibid*, p. 105).

21. 'वैदिकेऽपि विषये यथा—'ग्रहं संमार्ष्टि' इत्यत्र यः संमार्गो ग्रहविषये चोदितः स भेदेनैव व्यवतिष्ठत इति।' (*ibid*, p. 105).

22. 'शास्त्रे यथा—'नवेति विभाषा' इत्येतस्मिन्योगे प्रत्याख्याते उभयत्रविभाषाणां क्वचिद्विधिमुखेन क्वचित्प्रतिषेधमुखेन विभक्तानां विभक्तावृत्तिराश्रीयत इति।' (*ibid*, p. 105).

Bādha[23] is explained as nothing but the inference of the non-performance of a thing with a visible or invisible fruit though there is a possibility of its performance on the basis of the general injunction or the need for such a thing to be performed. It is illustrated by the example—अभक्ष्यो ग्रामकुक्कुटः ; when hungry people eat all animals indiscriminately, it is ordained that the village cock is not to be eaten ; as the result of this injunction, this cock is not eaten to appease the hunger. This abstention from eating the flesh of the village cocks is called *bādha*. The popular example of *bādha*[24] is given thus: ब्राह्मणेभ्यो दधि दीयताम्, तक्रं कौण्डिन्याय —all brahmins are to be given curd but only buttermilk to a Kauṇḍinya—a brahmin born in a kauṇḍinya family. Here the giving of curd to a kauṇḍinya is sublated by that of buttermilk. In V. śāstra it is illustrated by the Sūtra[25]—'आतोऽनुपसर्गे कः': which sublates the general rule 'कर्मण्यण्', so that in the example गोद, आतोऽनुपसर्गे क : operates Kapratyaya. Here Puṇyarāja, the Commentator, says[26] that the topic of Bādhā has many varieties and has been elaborately dealt with by the Ṭikā-kāra (Bhartṛhari) in bādhāsamuddeśa, probably a section in the third Kāṇḍa of Vākyapadīya which is also lost to us.

Samuccaya is the exception of bādha and it is defined as 'तुल्यबलानामविरोधिनां समुच्चयः—the combination of things of equal prominence not in conflict with each other. It is popularly illustrated thus[27] : when it is said that Devadatta is to be given food with salt, ghee and pot-herbs, it means that all the items of food mentioned are to be combined since they are not in conflict with one another. It is also illustrated thus : ब्राह्मणेभ्यः पाद्यमाचमनीयं च दीयताम्—brahmins are to be given water for washing their feet and ācamanīyaka, where both pādya and ācamanīya are combined. In V. Śāstra,[28] one and the same suffix has different names and they may be combined ; for example, one and the same suffix is called *pratyaya*, *kṛt* and *kṛtya* : similarly another suffix is called *pratyaya*, *taddhita* and *tadrāja*. The function of these different names can be well combined in one and the same suffix so long as they are not in conflict with one another.

23. 'अर्थित्वात्सामान्योपदेशाद्वा सति प्रवृत्तिसंभवे दृष्टादृष्टार्थमप्राप्त्यनुमानमात्रं यत्र सा बाधा।' यथा अर्थित्वात्प्रवृत्ते सामान्येन भक्षणे 'अभक्ष्यो ग्राम्यकुक्कटः' इति ग्राम्यकुक्कटभक्षणं क्षुत्प्रतिघातार्थमर्थित्वात्प्राप्तमनेन बाध्यत इति वैदिकमुदाहरणम्। (*ibid*, pp. 105 & 106).

24. 'लौकिकं यथा—ब्राह्मणेभ्यो दधि दीयतां तक्रं कौण्डिन्यायेत्यत्र दधिदानमौत्सर्गिकं तक्रदानेन विशिष्टे विषये बाध्यत इति। (*ibid*, p. 106).

25. शास्त्रे यथा—'कर्मण्यण्' इत्यस्य 'आतोऽनुपसर्गे: क' इति कप्रत्ययेन बाधेति। (*ibid*, p. 106).

26. 'एषाच टीकाकृता स्ववृत्तौ 'सा च तुल्यबलेष्वसंभवा'दित्यादिना बहुप्रकारा दर्शिता। न चेयत्ता प्रकाराणामस्यास्तेनापि तत्र दर्शिता। यस्मादुक्तं—संयमपरिमाणविकल्पा बाधा विस्तरेण बाधासमुद्देशे समर्थयिष्यते इति। (*ibid*, p. 106).

27. 'देवदत्तं भोजय लवणेन सर्पिषा शाकेन चेति।' (*ibid*, p. 106).

28. 'शास्त्रेऽप्यविरोधात्फलभेदाच्च प्रत्यय-कृत्-कृत्य संज्ञाः प्रत्ययतद्धित-तद्राजसंज्ञाश्चैकत्र समुच्चीयन्त इति।' (*ibid*, p. 106).

Another exception of bādha is *vikalpa*[29] : and it is defined thus : one is called optional when two or more are in conflict with each other and when they are of equal importance. It is illustrated in Vedas by the two injunctions—'व्रीहिभिर्यजेत' and 'यवैर्यजेत' which enjoin *vrīhi* and *yava* as the alternative original grains of the main oblation *puroḍāśa* in the Darśapūrṇamāsa sacrifice. It is understood by the popular example :—when it is said that Kauṇḍinya may be given curd and buttermilk, it is taken in the sense that either curd or buttermilk is to be given to Kauṇḍinya since each serves the same purpose—एकार्थास्तु विकल्पेरन्. In V. sastra it is illustrated by the sūtra—ण्वुल्तृचौ which enjoins both ण्वुल् and तृच् in the sense of an agent alternatively.

Another kind of *vikalpa*[30] is explained between a *vidhi* and *pratiṣedha* if pratiṣedha comes after the vidhi. It is illustrated by the Vedic example—अतिरात्रे षोडशिनं गृह्णाति and नातिरात्रे षोडशिनं गृह्णाति where the *Ṣoḍaśigrahaṇa* is first enjoined in the *Atirātra* sacrifice and then negated. Hence it is optional since both are of equal prominence. If we say that a particular thing may or may not be given to a person, then it is understood as optional. In V. Śāstra it is illustrated by the vārttika[31]—"नासिकादिभ्यो विभाषया सहनञ्विद्यमानपूर्वेभ्यः प्रतिषेधो विप्रतिषेधेन" ॥

Ūhā[32] is substitution of words in a *mantra* when it is taken to a *vikṛtiyāga*. The mantra 'अग्नये त्वा जुष्टं निर्वपामि' has got the word 'अग्नये' in reference to the deity of the *Āgneya* sacrifice in the *Darśapūrṇamāsa* group ; when it is transferred to the *Sauryeṣṭi* which is a *vikṛtiyāga* of Āgneya, the word 'अग्नये' is to be substituted by the word 'सूर्याय' ! This transposition or substitution of words in the mantra is called *ūha*. In V. Śāstra there are many case-changes[33] to be done in the sūtras according to the context. The nominative form of the word 'इत्' in the sūtra 'उपदेशेऽजनुनासिक इत्' is to be changed into its genetive form in

29. 'विकल्पोऽपि बाधाप्रतियोगी। सच तुल्यप्रमाणविशिष्टानां विरुद्धानां भवति। वेदे यथा—व्रीहिभिर्यजेत, यवैर्यजेतेति। लोके दधितक्रे कौण्डिन्याय दीयेतामित्येकफलदधितक्रदानचोदने। शास्त्रेऽपि ण्वुल्तृचावित्यादि। (*ibid*, p. 106).

30. 'विधिप्रतिषेधयोरपि तुल्यबलत्वे विरोधाद्विकल्पो भवत्येव।' (*ibid*, p. 106).

31. 'शास्त्रेऽपि वाग्रहणानर्थक्यं विधिनिषेधसामर्थ्यादुभयोः सिद्धत्वादिति। यथा प्रदर्शितं **स्ववृत्तौ टीकाकारेण**। विधिप्रतिषेधयोः खल्वपि तुल्यबलत्वे विरोधाद्विप्रतिषेधमाह—नासिकादिभ्यो विभाषया सहनञ्विद्यमानपूर्वेभ्यः प्रतिषेधो विप्रतिषेधेन। अयं विधिः स प्रतिषेधः, विधिप्रतिषेधयोश्चायुक्तो विप्रतिषेधः। अयमपि विधिर्न मृदूनामिव कार्पासानां कृतः प्रतिषेधविषय एवारभ्यते। स यथैव बह्वज्लक्षणं संयोगोपधलक्षणं च बाधते, एवं विद्यमानपूर्वलक्षणमपि। तत्र पुरस्तान्मध्येऽपवादा इति बाधकत्वे प्रतिषिद्धे विप्रतिषेधाद्बाधा व्यवस्थाप्यत इति।' (*ibid*, pp. 106 & 107).

32. 'ऊहः खल्वपि प्रकृतौ समर्थानां विकारे सामर्थ्याभावात्प्रकृतिरूपलिङ्गान्तरोपादानेन क्रियते।' (*ibid*, pp. 106 & 107).

33. 'व्याकरणेऽप्यूहविषयत्वमापन्नाः सर्वे विभक्तिविपरिणामाः। तेषु हि योगान्तरे यथा विभक्त्या संबद्धो यः शब्द उपलब्धः तत्संबन्धत्यागेनैव विभक्त्यन्तरयोगं संप्रतिपद्यते।' (*ibid*, p. 107).

'तस्य लोपः'; so also the form 'धातवः' in the sūtra भूवादयः is to be changed into 'धातोः' in the sūtra —अनुदात्तङित आत्मनेपदम्. This *Ūha* is not followed in a few instances. In the Vedic examples "यजमानं दण्डेन दीक्षयति अद्भिर्दीक्षयति, मेखलया दीक्षयति the word 'यजमान' in the accusative singular is not changed in the second and third vidhis; so also the word संख्या in the sutra[34] 'बहुगणवतुडतिसंख्या' is taken by *anuvṛtti* to the sūtra 'ष्णान्ता षट्' without any change.

Atideśa is analogical application by which the properties of one are transferred to another—अन्यत्रान्यधर्मपरिप्रापणमतिदेशः.—This has two varieties —सामान्यातिदेश and विशेषातिदेश. This is illustrated by the popular statements[35] like 'ब्राह्मणवदस्मिन्क्षत्रिये वर्तितव्यम्, गुरुवद्गुरुपुत्रे वर्तितव्यम्—which explain that all formalities of a Brahmin and a teacher should be observed in the Kṣatriya and the teacher's son. In the Veda the accessories of the model sacrifice like *Darśapūrṇamāsa* are to be transferred to the *vikṛti* sacrifice like *Sauryeṣṭi* on the basis of *atideśapramāṇa*. In V. Śāstra the famous sūtra—स्थानिवदादेशोऽनल्विधौ—is the example of this *atideśa* which enjoins *sthānivadbhāva* to the ādeśa (a substitute). The *viśeṣātideśa*[36] is illustrated by the popular statement that this particular Brahmin should be treated just like any other Brahmin. In the Vedas, one injunction is considered similar to another and so its *vidhyanta*—accessories—are to be transferred to another; for example, the *Sauryeṣṭi* which is enjoined by the injunction—सौर्यं चरुं निर्वपेद्ब्रह्मवर्चसकामः—is considered similar to the *Āgneyayāga* in the *Darśapūrṇamāsa* because they both have one single deity and oblation produced from ओषधि—paddy or some other grain; and so the *āgneyavidhyanta*—the accessories of āgneya sacrifice—is to be transferred to the *Sauryeṣṭi*.

In V. Śāstra six kinds of *viśeṣātideśa* are known. The first is called *Rūpātideśa* in the sūtra 'द्विर्वचनेऽचि' where the substitute—*dvirvacana* (the reduplication)—of the root has got by *atideśa* the same form of the original root. The second is *nimittātideśa* which is illustrated by the sūtra—'पूर्ववत्सनः'. It enjoins that the *sannanta* would have the same conditions of its original root—प्रकृतिधातु—like *ṅittva* for *ātmanepada*, so that in the form एदिधिषते the *ātmanepada* is attained.

The third is *tādātmyātideśa* which is illustrated by the sūtra—सुबामन्त्रिते पराङ्गवत्स्वरे (II.1-2). This sūtra enjoins that any *subanta* when followed by an *āmantrita* becomes a part of the latter or identical with it for the operation of

34. 'शास्त्रेऽपि बहुगणवतुडतिसंख्येति योगे विधीयमानसंबन्धस्य स्वरूपपदार्थकस्य संख्याशब्दस्य श्रुतस्य योगान्तरे संज्ञिविशेषणत्वं विज्ञायते—ष्णान्ता संख्या षट्संज्ञा भवतीति।' (*ibid*, p. 107).

35. *Ibid*, p. 108.

36. अथ विशेषातिदेशः—निर्ज्ञातसामान्यकार्येषु ब्राह्मणादिषु पुनरतिदेशसामर्थ्याद्विशिष्टप्रकृतिगतकार्यातिदेशः। शास्त्रे रूपातिदेशादिभिः षड्भिः प्रकारैः विशेषातिदेशः परिदृश्यते। (*ibid*, pp. 108 & 109).

its accent. It is illustrated by the passage—द्रवत्पाणी शुभस्पती—where the word शुभः has the आमन्त्रिताद्युदात्तत्व when followed by the आमन्त्रित—'पती'.

The fourth and the fifth are *śāstrātideśa* and *kāryātieśa* which are illustrated by the sūtra 'कर्मवत्कर्मणा तुल्यक्रियः (III. 1.87). It enjoins *karmavadbhāva* to a *kartṛ* when it possesses the same *kriyā* of the *karman*. According to śāstrātideśa, this sūtra enjoins only *karmavadbhāva* and then it has to go to the sūtra—सार्वधातुके यक्—to operate *yak* for *karmavadbhāva*. This *yak* would be sublated by *śap* because the latter is *para* (विप्रतिषेधे परं कार्यम्). So to get *yak* a special effort is to be made. Hence *gaurava*. But according to *kāryātideśa* the *sūtra* —कर्मवत्कर्मणा तुल्यक्रियः—enjoins the *kārya* itself viz. *yak* as the exception of *śap*. So there is no *gaurava* as explained in *śāstrātideśa*. Hence *kāryātideśa* is always preferred to *śāstrātideśa* in V. Śāstra. The *vyapadeśātideśa* can be understood from the loka and it is not found in *Vyākaraṇaśāstra*.

Adhikāra[37] is capacity to do a particular thing and it is also associated with a desire to attain the fruit of action. In the Vedas the adhikāra for sacrifice is restricted to the *Traivarṇikas* who are declared to be competent to perform them. The knowledge acquired by the study of the Vedas and the fire acquired by the *ādhāna* ceremony are the two most essential requisites for the performance of the vedic rites and these two are enjoined only to the *Traivarṇikas* in the Vedas. Besides these two, the physical fitness and such others like the capacity to earn money by prescribed rules are the necessary qualifications to make one *adhikārin*. The mere desire for the attainment of *Svarga*—*svargakāma*—does not make him the *adhikārin* though the main injunctions which enjoin these sacrifices refer to such persons only like *svargakāma*, *paśukāma* and *svārājyakāma*.

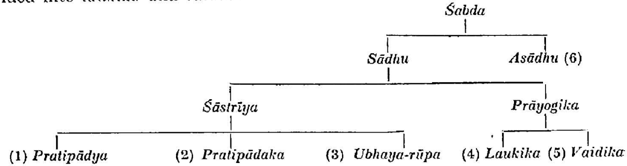
The V. śāstra has got adhikāra[38] to explain various kinds of *śabdas, arthas* and *puruṣadharmas*—the qualifications of the speaker and the hearer. The śabda is divided into six on the whole: first it is divided into *sādhu* and *asādhu*; the *sādhu* is again subdivided into *śāstrīya* and *prāyogika*; and the *śāstrīya* is again

37. अथाधिकारस्य निदर्शनम्—अर्थित्वं सामर्थ्यं शास्त्रापर्युदासयोगित्वमधिकारः स विद्यते यस्यासावधिकारी। अर्थित्वमधिकारकारणम्.........सत्येवार्थित्वे सामर्थ्यमधिकारकारणम्। (*ibid*, p. 109).

38. शास्त्रस्य तु शब्दार्थपुरुषधर्मेष्वधिकारः। तत्र षोढा शब्दः साधुरसाधुश्च। साधुरपि शास्त्रीयः प्रायोगिकश्च। शास्त्रीयोऽपि त्रेधा—प्रतिपाद्यः प्रतिपादक उभयरूपश्च। तत्र प्रतिपाद्यो यथा—दाधर्त्यादिनिपात्यमानः। प्रतिपादको यथा—प्रकृतिप्रत्ययादिः। तेन हि कुंभकारादिः प्रयोगस्थः प्रतिपाद्यते। उभयरूपो यथा—इतव्यशब्दः। स हि तव्यशब्देन प्रतिपाद्यते। प्रयोगस्थं च इतव्यशब्दं प्रतिपादयति। प्रायोगिकश्च लौकिकवैदिकभेदेन द्विधेत्येवमसाधुना सह षोढा शब्दः। तेषु मध्ये प्रतिपाद्येषु व्याकरणशास्त्रस्याधिकारः न प्रकृत्यादिषु। न हि ते व्याकरणे व्युत्पद्यन्ते इति।

अर्थोऽष्टादशधा। तत्र वस्तुमात्रमभिधेयश्च। अभिधेयोऽपि द्विधा—शास्त्रीयो लौकिकश्च। पुनरपि विशिष्टावग्रहसंप्रत्ययहेतुः तद्विपरीतश्च, मुख्यः परिकल्पितरूपविपर्यासश्च, व्यपदेश्योऽव्यपदेश्यश्च। सत्त्वभावमापन्नोऽसत्त्वभूतश्च स्थिरलक्षणो विवक्षाप्रापितसन्निधानश्च, अभिधीयमानः

sub-divided into *pratipādya*, *pratipādaka* and *ubhaya-rūpa* ; while the *prāyogika* is divided into *laukika* and *vaidika*.



The *paratipādya* is illustrated by the *nipāla* words like *dādharti* that Pāṇini himself has studied as accomplished words in his sūtras. The *pratipādaka* (the conveyer) is the *prakṛti*- (stem) and *pratyaya* (suffix) found in the finite forms like *kumbhakāra* used in language. The *ubhayarūpa* is illustrated by *itavya* which is conveyed by *tavya* to which the augment *i* is operated and which conveys the *itavya* in the examples like *niyojayitavya* used in language. Of these six padas V. Śāstra attempts to explain the *pratipādya* ; the rest like the *prakṛti* and *pratyaya* are found in usage and the Śāstra is not directly concerned with them.

The artha (meaning) is divided into eighteen varieties. They are as follows : *Vastumātra* and the *abhidheya* ; the *abhidheya* is further divided : *śāstrīya* and *laukika*, *viśiṣṭāvagrahasaṁpratyayahetu*, and its opposite ; *mukhya* and *parikalpitarūpaviparyāsa* ; *vyapadeśya* and *avyapadeśya* ; *sattvabhāvāpanna* and *asattvabhūta* ; *sthiralakṣaṇa* and *vivakṣāprāpitasannidhāna* ; *abhidhīyamāna* and *pratipadyamāna* ; *abhisaṁhita* and *nāntarīyaka*. Of them some are illustrated : The

प्रतिपाद्यमानश्च, अभिसंहितो नान्तरीयकश्चेति । तत्र वस्तुमात्रं वाह्योऽर्थो यो वक्तुं प्रतिपादयितुं न समीहितः । यस्तु समीहितोऽसावभिधेयः । तत्रैव च शब्दस्याधिकारः । सच द्विधा शास्त्रीयलौकिक भेदेन । तत्र शास्त्रीय आवापोद्धारिकः । लौकिकस्त्वखण्डः । लौकिके चार्थे शब्दस्याधिकारो न शास्त्रीये । शास्त्रीयो हि पौरुषेयः परिकल्पितः । एवमतथाभूतोऽपि शब्दसाधुत्वस्य निमित्तभावेन प्रतिपादको विज्ञायते । अतश्च तस्य व्यभिचारेऽप्यव्यभिचार एव स्मर्तृणाम् । स चानियतावधि बहुधा प्रविभज्यते व्याख्यातृभिः । विशिष्टावग्रहसंप्रत्ययहेतुर्यथा—कंसं घातयति बलिं बन्धयतीति । अत्र ह्यर्थो न तथाभूतः अपितु विशिष्टाकारेणैव संप्रत्ययेन गोचरीकृतो व्यवहारविषयतामनुपतति । तद्विपरीतो यो बहिरेव तथा व्यवस्थितः । यथा-गौः शुक्ल इत्यादि । मुख्यो यथा—सास्नादिमान्गौरिति । परिकल्पितो निमित्तवशेन रूपविपर्यासो यस्यासौ परिकल्पितनिमित्तरूपविपर्यासो गौणोऽर्थ उच्यते-यथा गौर्वाहीक इति । व्यपदेश्य आवापोद्धारिक एव जातिर्वा द्रव्यं वेत्येवमुक्त इति । अव्यपदेश्यस्त्वखण्ड एव वाक्यार्थलक्षण इति । सत्त्वभावमापन्नो व्यपदेश्य एवावापोद्धारिकसंज्ञकः । असत्त्वभूतो वाक्यार्थलक्षण एव । उक्त-भेदादेवात्र प्रायशो भेदकथनम् । स्थिरलक्षणो-यथा-राजपुरुष इत्यत्र राजसंबन्धित्वं पुरुषस्य । तद्धि न व्यभिचरति । विवक्षाप्रापितसन्निधानो यथा-राज्ञः पुरुषस्येति । अत्र हि संबन्धित्वं व्यभिचरति । विशेषणविशेष्ययोर्यथेष्टत्वात् । अभिधीयमानो यथा-राजसख इति । अत्र राज्ञः सखायमित्यर्थोऽभिधीयते । तस्मिंस्त्वभिधीयमाने राजा सखा अस्येत्ययमर्थः प्रतीयमान एव । अभिसंहितो यथा-गोशब्दे जातिर्द्रव्यं वेति । नान्तरीयको यथा-तत्रैव वर्णसंस्थानादिः । इत्येवमभिधेयभेदा उपदर्शनीयाः ॥ (*ibid*, pp. 109-111).

Vastumātra is the external object which is not intended to be or cannot be described. That which is intended to be described is called *abhidheya.*

The properties of the speaker[39] and the hearer are the general qualities of the man—envy, anger, contempt, etc. and the V. Śāstra enjoins pluta, dvirvacana, etc. after certain words when these passions are indicated by them.

Krama or sequence is of eight kinds[40]—*śrutikrama, arthakrama, pāṭhakrama, kāṇḍakrama, pravṛttikrama, pratipattikrama, prayogakrama* and *buddhikrama.* Śrutikrama is illustrated by the vedic example—'हृदयस्याग्रेऽवद्यति, अथ जिह्वाया अथ वक्षस:'—where words 'अग्रे' and 'अथ' express the krama that *hṛdayāvadāna* should be first performed, then the *jihvāvadāna* and then the *vakshoavadāna.* In V. Śāstra, the sūtras like परस्मपदानां णलतुस्थलथुसणल्वमा: illustrate the *yathāsaṅkhyakrama* between the *sthāni* and the *ādeśa* enjoined by them (i.e.) *ti* would be substituted by *ṇal, tas* by *atus,* etc. The *arthakrama*[41] where the mutual utility is taken into account is illustrated by the vedic example—अग्निहोत्रं जुहोति, यवागूं पचति—where the pāṭhakrama indicates that Agnihotrahoma is to be first performed and then *yavāgūpāka* but since the latter after the performance of the former is of no practical utility, the latter is to be first performed before the former so that the *yavāgu* prepared can be utilised as the accessory of the *agnihotrahoma.* In V. śāstra it is illustrated by the *lakāravidhi* in reference to the *apradhānakarman* in the roots of *duh* and others in passive and other forms—गौर्दुग्धा. सुदोहा गौ: where *payas* is *pradhānakarman* and *go* is only a *guṇakarman* though one cannot have milk without the help of the cow. Here the *payas* though *pradhānakarman* is related to the action of *doha* only after it is related to the cow—the *guṇakarman.* Hence the *arthakrama.*

39. पुरुषधर्मा वक्तृत्वप्रतिपत्तृत्वप्रभृतय:। तत्र वक्तृधर्मा असूयासंमतिकोपकुत्सनभर्त्सनादयश्चेति। प्रतिपतृधर्मास्तु कुत्स्यमानत्वप्रभृतय एव। तत्र शास्त्रस्य प्लुतद्विर्वचनादिविधायकत्वेनाधिकार इति। अत्र च य एव धर्मा: शब्दानां शास्त्रस्य वा अनधिकारविषयत्वेनोक्तास्तानेवापेक्ष्योच्यते—व्युदासोऽस्य क्रियान्तर इति। (*ibid*, p. 111).

40. श्रुत्यादिभेदेनायं क्रमो नैकप्रकार:। तथा च श्रुतिक्रमोऽर्थक्रम: पाठक्रम: काण्डक्रम: प्रवृत्तिक्रम: प्रतिपत्तिक्रम: प्रयोगक्रम: बुद्धिक्रमश्चेति। तत्र श्रुतिक्रमो यथा-स्नात्वा व्रजतीति। अत्र त्वाप्रत्ययेनैव श्रुत्या क्रम उक्त:। वेदे यथा—हृदयस्याग्रेऽवद्यति अथ जिह्वाया इत्यत्र श्रुत्यैव अग्रेऽथशब्दाभ्यां क्रम उक्त:। शास्त्रेऽपि च परस्मैपदानां णलतुसित्यादौ यथासंख्यमनुदेश:समानामिति श्रुत्यैव क्रम:। (*ibid*, p. 111).

41. अर्थ: सामर्थ्यं तन्निमित्त: क्रमोऽर्थक्रमो यथा—भुक्त्वा स्नात्वा व्रजतीति। अत्र स्नानादीनामन्यथा शब्दोपात्तानामप्यर्थस्वरूपपर्यालोचनया स्नानादिक्रमो लक्ष्यते। वेदे यथा—अग्निहोत्रं जुहोति यवागूं श्रपयतीत्यादौ श्रपणं पश्चाद्विनिर्दिष्टमपि पूर्वमनुष्ठीयते ततोऽग्निहोत्रमित्यर्थक्रम:। शास्त्रेऽपि गुणकर्मणि लादिविधिरित्युक्तम्। तथाहि—गां दोग्धि पय इत्यत्र गवा कर्मणा पूर्वं दुहेर्योग: तत: पयस:। न ह्यनुपादाय गां कश्चित्पय आदातुमर्हति। तस्मादत्र गोपयसोर्दुहिना क्रमेण संबन्ध: सोऽर्थसामर्थ्यादुपजायते। तस्मात्सत्यपि प्रधाने पयसि दुहेर्गवैव पूर्वं संबन्ध इति तत्रैव लादयोऽन्तरङ्गत्वादुत्पद्यन्ते—गौर्दुग्धा सुदोहा गौरिति। (*ibid*, pp. 111 & 112)

The pāṭhakrama[42] is illustrated by समिधो यजति, तनूनपातं यजति, etc. where these sacrifices enjoined by the injunctions are performed in the krama in which they are enjoined by the *vidhivākyas* (i.e.) first the *samidh-yāga*, then the *tanūnapād-yāga*, etc. In V. Śāstra it is illustrated by the two sūtras—विप्रतिषेधे परं कार्यम्, पूर्वत्रासिद्धम्. The former enjoins the superiority of the *paraśāstra* in the *sapādasaptādhyāyī* while the latter explains that in the last *tripādī* the *pūrvaśāstra* is more powerful than the latter.

The *kāṇḍakrama*[43] which is none other than a variety of *pāṭhakrama* is illustrated in the Vedas thus : the krama or order in the performance of the *Āgneya* and other sacrifices in *Darśapūrṇamāsa* is according to the *krama* of the *yājyānuvākyā-mantras*. The yājyānuvākyāmantras of the Āgneyayāga are first studied and then those of the Agnīṣomīya (and not the reverse according to the brāhmaṇa-pāṭhakrama). In V. Śāstra, if there be a conflict between the *dvirvacana-kāṇḍa* and *samprasāraṇakāṇḍa*, the former is more powerful than the latter. This is only a further elaboration of the sūtra 'विप्रतिषेधे परं कार्यम्' in the sense 'विप्रतिषेधे इष्टं कार्यम्'.

The *pravṛttikrama*[43] is illustrated in the Vedas thus : in the *Prājāpatya-paśu* sacrifices, the accessories like *prokṣaṇa*, *viśasana* and *paryagnikaraṇa* are to be repeated in every *paśu* ; the second and the third padārthas are to be performed in the same order in which the first *padārtha* is done. This is by *pravṛttikrama*. In V. Śāstra it is illustrated by the examples पट्व्या, मृद्व्या, where the *liṅga-sambandha* is first made and then *Karma-saṁkhyādisambandha* ; so first the *strīpratyaya ṅīp* is to be operated and then the *ekavacana-pratyaya*. In the same *krama* the *yaṇ-ādeśa* is to be effected.

The *pratipattikrama*[44] is illustrated by the sūtra—'लुङ्लङ्लृङ्क्ष्वडुदात्तः' which enjoins the *augment aṭ* in the aorist, imperfect and conditional forms. Here in the final form the augment *aṭ* appears first but in understanding the complete form and its meaning, the main part of the form, viz., the root and its meaning, the personal terminations and their meanings come first in the reader's mind and then

42. उच्चारणक्रम एव पाठक्रमो यथा—
इन्दुस्वर्णगमातङ्गपुंस्कोकिलकलापिनः ।
वक्त्रकान्तीक्षणगतिस्वरकेशैस्त्वया जिताः ॥
इत्यत्र यथापठितानां यथापठितैरेव संबन्ध इति । (*ibid*, p. 112)

43. काण्डक्रमो यथा—येनैव क्रमेण ब्राह्मणक्षत्रियविशां वर्णसमाचारप्रतिपादकानि प्रकरणान्युद्दिष्टानि तेनैवाभिधीयन्ते इति । वेदे तु कुत्रचिज्ज्ञाते कर्मणि येनैव कण्डिकाक्रमेण कर्माणि चोद्यन्ते तेनैव क्रमेण प्रवर्तन्ते । यथा—याज्यानुवाक्यानां आग्नेयादीनां च । (*ibid*, p. 112).

44. प्रवृत्तिक्रमो यथा—येन क्रमेण ब्राह्मणाः समानाः प्रविशन्ति तेनैव क्रमेण यथास्वं चोदितं कार्यं प्रतिलभन्त इति । (*ibid*, pp. 112 & 113).

the augment *aṭ*. It is also illustrated by the popular example 'पुरुषो राज्ञः' where though the word पुरुषः appears first, the meaning of the word राज्ञः is first known, and then only that of the word पुरुषः because the *puruṣa* is understood as related to the king (as indicated by the genetive). In the Vedas also it is illustrated thus : though the *Dīkṣaṇīyeṣṭi* is first studied and then the *Soma* sacrifice, yet the knowledge of the *Soma* sacrifice comes first in the mind of the reader as the chief—pradhānayāga—then only that of the *Dīkṣaṇīyeṣṭi*, since the latter is known at a later stage as the accessory of the former—*Soma* sacrifice.

The *prayogakrama*[46] is illustrated in V. Śāstra by the root डुकृञ् where the two sounds ḍ and ñ are known as इत् in the order of their existence in the root *i.e.* first ḍ is made इत् and then ñ. In the Vedas the passage—'दर्शपूर्णमासाभ्यामिष्ट्वा सोमेन यजेत' enjoins the performance of the *Soma* sacrifice after that of the *Darśapūrṇamāsa yāga*, as explained by the gerund *iṣṭvā*.

The *buddhikrama* is illustrated in V. Śāstra thus: in the sūtra "इको यणचि" which enjoins यण् to इक् when it is followed by a vowel the sequence of the *varṇas* (i.e.) *paurvāparya* cannot be explained as existing in the śabda, but only in the intellect or experience of the speaker. In the Vedas also the *krama* among the *prayājas* can be explained only as existing in our experience since they all are existent only for two or three *kṣaṇas* as actions. In this connection the mutual superiority or inferiority between one *karman* and another is also explained by our author.

The *prayukti*[47] or *prayojya-prayojaka-bhāva* is explained by the popular example: the king is the main cause of the shadow of the royal umbrella but other people who accompany him, though associated with the umbrella, are not the *prayojakas*—conditions—of the same. In the Vedas the passage—'पुरोडाशकपालेन तुषानुपवपति' indicates that the *puroḍāśa* is the *prayojaka* of the kapālas and not the *tuṣopavāpa*.

The *śeṣa-śeṣibhāva*[48] is illustrated in V. Śāstra thus: the stem or *prakṛti* is the accessory of the suffix in a finite word, because the idea conveyed by the suffix is the chief concept—*viśeṣya*, according to the generally accepted dictum—प्रकृतिप्रत्ययौ प्रत्ययार्थं सह ब्रूतः तयोस्तु प्रत्ययः प्राधान्येन. The accessory has two main varieties—the *sannipatyopakāraka*—the direct accessory—and the *ārādupakāraka*—the remote accessory. The stem is the direct accessory while the adjuncts of the stem are the remote accessories. In the Vedas, the *prokṣaṇa* and *avaghāta* of the *vrīhis* are the direct accessories while the *prayājas*, *anuyājas* etc. are the remote accessories.

45. लोके यथा—पुरुषो राज्ञ इत्युक्तेऽप्युच्चारणक्रममतिक्रम्य राजार्थव्यवच्छेदेनैव पुरुषस्य प्रतिपत्तिः। (*ibid*, p. 113)
46. *ibid*, pp. 113 & 114.
47. *ibid*, p. 114.
48. *ibid*, pp. 114 & 115.

Bheda[49] is explained under different heads: *śaktibheda* and *vyāpārabheda*. Śaktibheda is illustrated by the different usages—वलाहकाद्विद्योतते, वलाहके विद्योतते, वलाहको विद्योतते—where valāhaka—the cloud—is viewed as *apādāna*, *ādhāra* and *kartā*. Vyāpārabheda is said to be always associated with *śaktibheda*. Sometimes *vyāpārabheda* or *kriyābheda* is explained on the basis of *phalabheda*—different results: e.g. the action of charity—*dāna*—has got different results—long life, good health and prosperity. Since the results are different, the action of gift producing each phala is differentiated from each other. Similarly the difference of action is explained by the difference of agents, in the examples पचतः and पचन्ति.

The exception is abheda[50]—identity which is illustrated by the sūtra—समानकर्तृकयोः पूर्वकाले. In the example 'पक्त्वौदनं भुंक्ते' the identity of the agents—समानकर्तृकत्व—of the two actions *pāka* and *bhojana*, is explained by the suffix *ktvā*. In the Vedas the verbs ददाति, यजते and जुहोति illustrte the bheda—difference between dāna, yāga and homa by the pramāṇa *śabdāntara*. This bheda and its exception abheda are considered sometimes real and sometimes unreal in the sense that they exist only in human imagination or they are creations of the will of the speaker—विवक्षाधीन.

In addition to these various main topics of the twleve chapters of P. M. Śāstra, many other important topics allied with them are also explained by Bhartṛhari in the verses 84-87.[51] They mainly deal with the nature and scope of *pratiṣedha* and *paryudāsa* in the negative passages and that of the primary and secondary meanings of words and sentences even found in the *arthavādas*.

Pratiṣedha is explained in those instances where the negative particle *nañ* is directly related to the main verb in the sentence. It is illustrated by the Vedic passages—नानृतं वदेत्, ब्राह्मणो न हन्तव्यः; etc. where the negative particle is directly related to the verb and thus prohibits all people from the utterance of falsehood and the murder of a Brahmin respectively. In V. Śāstra it is illustrated

49. *ibid*, p. 115.
50. *ibid*, p. 116.
51. प््रसज्यप्रतिषेधोऽयं पर्युदासोऽयमत्र तु ।
इदं गौणमिदं मुख्यं व्यापीदं गुरु लघ्विदम् ।।

भेदेनाङ्गाङ्गिभावोऽस्य वहुभेदं विकल्प्यते ।
इदं नियम्यतेऽस्यात्र योग्यत्वमुपजायते ।।

अस्य वाक्यान्तरे दृष्टाल्लिङ्गाद्भेदोऽनुमीयते ।
अयं शब्दादपोद्धृत्य पदार्थः प्रविभज्यते ।।

इति वाक्येषु ये धर्माः पदार्थोपनिबन्धनाः ।
सर्वे ते न प्रकल्पेरन्पदं चेत्स्यादवाचकम् ।।

(*Vākyapadīya*-Kārikās, Kāṇḍa II, 84-87). Banaras Edition pp. 116 & 117.
[*vide* also Puṇyarāja's commentary on these verses pp. 117-120—Banaras Edition].

by the sūtra—अनचि च which enjoins optionally the reduplication of *yar* when preceded by a vowel but not when followed by a vowel. Here the word 'अनचि' normally may mean अज्भिन्न namely, a *hal* but it is to be taken along with the main verb in the sūtra (i.e. अचि परे न द्वित्वं भवति) in the sense that the re-duplication cannot be operated when followed by a vowel.

The *paryudāsa* is explained when the negative particle is directly related to a substantive or a root. It is illustrated by the Vedic example 'नानुयाजेषु' in the passage 'यजतिषु येयजामहं करोति नानुयाजेषु'. It means that the येयजामहमन्त्र is to be uttered in all *yāgas* except *anuyāja*. The section 'नानुयाजेषु' means 'अनुयाजभिन्नेषु' by taking the negative particle *nañ* in the paryudāsa sense. This interpretation is based on the rule that as far as possible *vikalpa* is to be avoided in all injunctions since it involves eight fallacies. If नानुयाजेषु is taken as प्रतिषेध, then in *anuyāja* येयजामहमन्त्र is to be taken as optional—वैकल्पिक because there is a general injunction of येयजामहमन्त्र for all *yāgas* (including anuyājas) and then there is a prohibition.—निषेध. So also in the example 'नेक्षेतोद्यन्तमादित्यं' *paryudāsa* has been accepted and the अनीक्षणसङ्कल्प is enjoined by this *vidhi* as the duty of a *snātaka*. In V. Śāstra there are many sūtras containing *paryudāsa*—आतोऽनुपसर्गे कः, अकर्तरि च कारके संज्ञायाम् where the words अनुपसर्गे and अकर्तरि explain that which is devoid of *upasarga* and that which is other than *kartā*.

The distinction between the *mukhya* and the *gauṇa* expressions is illustrated in V. Śāstra by the sūtra—तत्पुरुषः समानाधिकरणः कर्मधारयः. Here the word *tatpuruṣa* is qualified by the word समानाधिकरण ; the component parts of tatpuruṣa can be called *samānādhikaraṇa* (i.e.) conveying one and the same idea through different *nimittas* and so the *sāmānādhikaraṇya* found in the parts of the compound is superimposed (आरोपित) on the whole, *viz.*, the *tatpuruṣa* compound. In the Vedas there are many *arthavāda* passages like 'यजमानः प्रस्तरः' and 'आदित्यो यूपः' where the words यजमान and आदित्य are used in their secondary senses only. The *prastara* (a bundle of darbha grass) is identified with the yajamāna in passage 'यजमानः प्रस्तरः' which is absurd ; so it conveys the secondary sense viz., यजमानकार्यकारित्व—the status of doing the work of yajamāna, *viz.*, bearing the *yajñapātras* on its body. This is by 'तत्सिद्धि' one kind of *gauṇī vṛtti*, according to the Mīmāṁsakas. So also the word आदित्य in the passage 'आदित्यो यूपः' conveys its secondary sense, *viz.*, the brightness of the sun found in yūpa on the basis of *sārūpya*—another variety of *gauṇī*.

In this manner many other topics which help to determine the exact meanings of the words and sentences are elucidated by our author with illustrations from loka, from the Vedas and from the V. Śāstra. This method of explanation of *sūtras* and *vārttikas* in V. Śāstra on the basis of generally accepted nyāyas or rules of interpretation found in P. M. Śāstra enhances highly the importance of V. Śāstra as a true science in the strict sense of the term.

SOME SUMERO-MARĀTHĪ CORRESPONDENCES

By

R. G. HARSHE

It was a mere chance that placed in my hands the small brochure of M. PAUL RIVET, a French Scholar, on Sumerian and Oceanian. Their intimate connection was a great revelation to me and if I summarize his views at the very outset it will serve as a very good background for the subject in hand.

After having noted numerous facts showing the influence exercised by the peoples of the Pacific on the Mediterranean and the African world, M. RIVET writes in his work on *Le groupe Océanien*[1]: " The conclusion arrived at in the works of AUTRAN[2] and WADDELL[3] on the resemblances between the Sumerian and the Indo-European, those of DREXEL[4] on the affinities of the Sumerian and the languages of Bornu[5] are necessarily not mutually exclusive. Those works enable us to suppose that the Sumerian world, having a well-attested contact with India before 3000 B.C., has played, at a certain epoch, an important rôle as agent of transmission of cultural elements between the Oceanian Group, Europe and Africa."

" M. PRZYLUSKI at the same time gave a series of lexical concordances between the Sumerian and the languages of the Oceanian group.[6] His conclusions were: ' These analogies, the list of which is not closed, can explain themselves by means of the loans. It is not at all impossible that the Sumerian be connected with the Austro-Asiatic languages. But it would be premature to choose between the two alternatives.' "

In his second study : *Sumérien et Océanien*, M. RIVET has carried on his researches still further in the subject and his conclusions are : " A more extensive comparison of the Sumerian and the Oceanian vocabulary has revealed to me so

1. *Bulletin de la Société de Linguistique de Paris*, No. 83, 1925-26, pp. 142-168.
2. *Sumérien et Indo-Européen* : L'aspect morphologique de la question," Paris, 1925.
3. (*i*) *The Indo-Sumerian seals deciphered*, London, 1925.
   (*ii*) Dynasty of Haryashwa, etc. *The Asiatic Review*, London, New series, Vol. XXI, pp. 675-682.
   (*iii*) *Sumer-Aryan comparative lexicon.*
4. " Bornu und Sumer "—*Anthropos* XIV-XV, pp. 215-294.
   Gliederung der afrikanischen Sprachen. Eine systematische Untersuchung mit Berücksichtigung der völker-geschichtlichen Probleme—*Ibid* XVI-XVII, pp. 73-102 ; XVIII-XIX, pp. 12-39 ; XX pp. 210-243 ; 444. 460.
5. The Ancient Kingdom of the Central Soudan in Africa.
6. "Emprunts anaryens en Indo-Aryen," *BSL*, No. 24, pp. 118-23 ; No. 25, pp. 66-71 ; No. 26, pp. 98-103.

close and so numerous resemblances that I am now convinced of the closer ties which unite these two languages and that the Sumerian ought to be classed in the Oceanian group.[7]"

He also mentions another important work by E. STUCKEN who has published an exntesive study (1927) of the comparative vocabulary between the Polynesian and the Sumerian on the one hand and the American languages on the other and says that his conclusions are also the same.

The chief difficulty for M. RIVET and in fact for all the scholars who wish to carry on similar studies, is the comparatively meagre vocabulary in Sumerian—a language chiefly religious and administrative in which the words used are more or less abstract and most of them are mono-syllabic formed with three elements at the most.

A lot of work has, however, been done on Sumerian, Assyrian, Akkadian and Babylonian, as well as Chaldean in Europe and America but most of it is in German and French—the learned languages not cultivated to an appreciable extent in India. So far as it is known there is no Indian Scholar who has specialised in this branch of study which is vitally connected with the Vedic period of our civilisation. In fact, the entire Aryan civilisation as reflected in Vedic and Post-Vedic literature, bearing traces of the ancient tradition, Vedic and pre-Vedic, will have to be studied anew in the light of the modern discoveries regarding contemporary civilisations.[8] Such a study is bound to throw a flood of light on certain Vedic conceptions and even institutions against the non-Aryan background.

In spite of what has been done so far, there is ample field for new researches for Archæologists as the soil is extremely rich in ancient deposits in the whole of the Middle-East and the day may not be far distant when a team of Indian archæologists and historians would carry on their excavations in this region with a view to making their own contribution to the subject. Even with the material that is available a concerted plan of co-ordinated research by a body of competent scholars will give us a new picture of this ancient civilisation.

The present study is an extension of the work of M. Paul RIVET inasmuch as there is an amazingly large number of Marāṭhī words which can presumably be correlated with Sumerian words.

As M. RIVET has exhaustively dealt with the correspondences between Sumerian and Oceanian, the present study will serve as a connecting link between the two

7. Introduction, p. 1.

8. The present writer has shown at length the inter-communication between the Aryans and the Assyrians, so far as the traffic in medicinal substances was concerned, in his Intrdouction to "Śivakośa" (Deccan College Publication, No. L 24, 1952) and pointed out some 80 names common to Assyrian and Ayurvedic Botany.

which is so far missing and if similar studies are carried out in other Modern Indian languages the Sumerian element in the ancient Indian culture can be properly ascertained and it will open a new vista for further researches in the field.

It would be desirable to draw upon the material collected by M. RIVET in his *Sumérien et Océanien* especially for pointing out the intermediary correspondences between the Sumerian and the Marāṭhī words as they would need no further proof.[9] Besides, only those words have been selected here which will be easily indentified without going into the complicated rules of phonetical changes in transmission from one language to the other to avoid any controversy. To establish intimate relationship between the words from one language and those of another mere verbal resemblances, both in sounds and meaning, are not enough. These must be shown against a historical background which permitted constant intercourse between the two. As the subject dealt with refers to the hoary past of which most scanty records are available, this humble attempt may help in reconstructing history from the linguistic material. To strengthen our hands it would be worthwhile to reproduce here the findings of M. RIVET who has also published several contributary studies on the subject[10]:

1. " Our comparative vocabulary gives in addition numerous examples of the loans of vocabulary between the Muṇḍa and the Sumerian.

2. " Commercial relations existed between the lower Euphrates and the Indus since 3000 B.C.

3. " A certain number of radicals common to the Sumerian and the Oceanian languages are found both in the Indo-European and the Semitic.

4. " They are more numerous in the case of Sumerian and Muṇḍa.

5. " It is an established fact that the languages connected with the Oceanian group were and still are spoken in India and they had occupied more extensive region than at present. It is therefore natural that they should have exercised some influence on the non-Oceanian languages.

6. " The Oceanian influence did not confine itself to India but much further west it had extended its domain in Mesopotamia and the Mediterranean basin.

9. There are about 16 such words given in the Appendix.

10. (i) Recherche d'une voie de migration des Australiens vers l'Amérique.
(ii) " Les Australiens en Amérique " *BSL* 81. 26, pp. 23-63.
(iii) " Le rôle des Océaniens dans l'histoire du peuplement du monde et de la civilisation." *Annales de Géographie*, 35, pp. 385-90.
(iv) " Les Malays—Polynésiens en Amérique." *Journal de la Société des Américanistes*, Nouvelle série 18, pp. 141-278.

7. " Anthropology and Ethnography show in fact that these peoples have dominated the pre-Indo-European and the pre-Semitic Mediterranean world and on the African world also.

8. " The Science of Linguistics also furnishes interesting indications in support of this thesis.

9. " I am convinced that in the Mediterranean basin and in a portion more or less extensive of Africa there is an Oceanian substratum. In fact it is possible to show that Oceanian influence due to commerce had spread over the New World, Polynesia and even as far north as Japan."

In the light of this information the connection between the Sumerian and the Marāṭhī words will not seem absurd and imaginary. Sumerian civilisation is considered by competent scholars as older than the Vedic civilisation and it would be very interesting to find out correspondences in Vedic Sanskrit and Sumerian.

For want of specialisation in the subject it is improper to go into further philological details but the examples selected at random are so numerous that one would be led to believe in the Sumerian origin of most of these words. The present writer cannot pretend to have made a specialised study of Sumerian. But even a random gleaning of words from the books available at hand[11] would reveal the influence of Sumerian on the Marāṭhī vocabulary.

A more scientific study would be fruitful in many ways and it must be left to a close student of Indo-Sumerian Lingusitics. From the study of Sumero-Marāṭhī correspondences presented here in the Appendix to this paper it will be noted that out of the 120 words about 42 can be etymologically connected with Sanskrit. Of these the words *agāra* or *āgāra*, *balh*, *buruḍa*, *ḍākiṇī*, *kakud*, *guḍa*, *kustum-buru*, *sāgara*, *śibira*, *śikhariṇī*, *śabara*, *yūkā*, *ulkā*, *Umā*, etc. seem to be loan-words, a little bit sanskritized and incorporated in the Sanskrit vocabulary. The Sumerian word *admānu* deserves to be specially studied in relation to the Vedic cognates *adman*, *sadman* or even *advan*. MW. records three meanings of *adman*, namely, " eating ; a meal ; a house." But if corresponding words for *admani* (fire) and *admara* (gluttonous) are found in Sumerian, it would fix up the original meaning of the word and confirm its origin also. The words that have come into Marāṭhī, apparently through Persian and Arabic but which are derived from the Sumerian, number about 18. Those that find correspondence in the Oceanian languages are about 16 and the rest (44) are firmly embedded in Marāṭhī and have vitally affected

11. (i) *A Summerian Grammar and Chrestomathy*—Stephen LANGDON.
(ii) *Le Verbe Sumérien*' by Raymond JESTIN.
(iii) '*Grammaire Accadienne*'—G. RYCKMANS.
(iv) '*Sumérien et Océanien*'—P. RIVET.

our life and culture. For instance, the word *āgara* (= field). The extended meaning that has been evolved—that of a house in an enclosure containing fields, orchards and gardens etc. is indicative of a peculiar style of life in our coastal region, the Konkan, and the very fact that it is restricted to the maritime region shows its foreign importation at some remote time in history. *Balutē* (= farm produce) is another key-word. The distribution of the village produce among its officiating members in a definite proportion is a very old institution, as will be seen from a reference to this word in *Jñ.* 13-182, and it was the pivotal point of our old village organisation. Our manner of dress, even in pre-Jñāneśwara days (XII century), was dictated by a foreign people as the word *Lugaḍē* is applied, even in Gujarati, to the daily wearing apparel both of men and women. The Sumerian *Kothiṃbīra* (coriander) is an article of almost daily consumption with us without which our food would not be savoury. Similarly, all the tasteful dishes based on *ukaḍa* (cooked flour or steamed food) namely, *modak, siddhalāḍu, pāpaḍyā, kurḍayā*, etc., etc., and even the commonest *śikraṇa* (bananas crushed in milk) come from outside. The custom of *śesa-bharaṇē* (applying red-turmeric-powder to the forehead) on all the auspicious functions, including marriage, i.., as the name indicates, a foreign custom. Even our *wāḍā* (= a large house) does not belong to us. These and several other indications that we get from the study of the words presented here will converge to the view that there must be a very active Sumerian element in the population of Maharashtra and that would explain the etymology of the word *mahār* (= pariah) as an anterior racial group before the advent of the Sumerians. This very word indicates that this racial group was different from the aborigines in the opinion of the Sumerians and that it had come to occupy this country some time before they came. Traces of Sumerian words in Brahui and Sindhi as shown in the Appendix indicate the direction in which some of these hordes had reached the Indian sub-continent. It is also likely that some of them had come directly via the Persian Gulf to the Western coast for fear of being completely annihilated by the invading conquerors who often indulged in human carnage and destruction of property on a large scale.

I need not stress any further the necessity of studying Sumerian even for the better understanding of our ancient civilisation and its special significance to Maharashtra.[12] The words shown in the Appendix will speak for themselves :

12. **This paper was read at the Linguistic Section of the All-India Oriental Conference held at Ahmedabad in October 1953.**

APPENDIX

SUMERO[1]-MARĀTHĪ CORRESPONDENCES

1. *Abu; aba* (father) : Marāṭhī : *abā* or *ābā*—an appellative for father or elder brother. *Bābā* is also used in the same sense and as a general term of respect for elderly persons and a term of endearment in the case of others. *Bā* is the diminutive of *bābā*, e.g. *Dājibā*, *Śivabā*, *Rāvbā*, etc. *cf.* Brahui[2] : *abā*—father, grandfather, respectful term of address. Baloch : *abbā*, Sindhī : *abo*. Arabic : *ābā* (= fathers). In Aramaic and Chaldean : *Abba* ; retained in the Greek New Testament and used in Syriac and Coptic Churches, meaning father or a respectable person.[3]

2. *Admānu* (house, stay, delay) : Marāṭhī : *anmān*—hesitation, mental reserve ; used only in a metaphorical sense. The *d* of *admānu* > *n* before *m*, optionally, according to Skr. Sandhi rules. In Old M. the ending *u* is optionally dropped.

   Cf. Ved. Skr.: *Adman* (a house)—MW[4]. Brahui : *aḍ*—sheltered place ; Tam. Mal. Kan. Tel. Tuḷ.: *aḍ*—shelter, stop, soothe, press. In this sense there is another word in Marāṭhī *aḍṇē*—to come to a standstill. and its several derivatives : *aḍakṇē, aḍaviṇē* ; *āḍ*—with something in between and *āḍosā*—shelter. These seem to have come from the Dravidian stock into Marāṭhī.

*3. *Agar, agār* (field, farm) : MW. notes this as a Vedic word but is doubtful about its meaning (p. 113) ; the Skr. forms recorded are : *āgara* or *āgāra*, the latter word meaning primarily 'swallowing', 'receptacle' (from *ā* + *gṛī*) and later as 'a room', 'a house'. In Marāṭhī, however, both the Sumerian forms, with a slight variation *āgar* instead of *agār*, are found in their original sense. It generally means 'a farm near sea-side' and there are several names of villages in the Konkaṇ ending with *āgar* e.g. *Divē-āgar, Aṣṭāgar, Āgarguḷē* etc. By extension it means a house

1. Under Sumerian words with some of their Akkadian and Assyrian equivalents are also included in this list.

2. Denys Bray, *Brahui Grammar*, Vol. II.

3. It is found included in the Linguistic Atlas mapping out different words for 'father' in Romance languages in Europe.

4. MW.—*Dictionary of Sanskrit* by Monier Williams, p. 10, ed. 1872. In the later edition this sense of the word is dropped but for the word *adman* meaning 'a house' see Sāyaṇa on *ṚV.* I.124.2 (Poona ed. p. 787) : '*admeti gṛhanāma, varūtham adma iti tannāmasu pāṭhāt*'. *Adman* is perhaps an earlier Pre-Vedic form of the word *ātman* which is usually derived from $\sqrt{an}$ 'to breathe' or $\sqrt{at}$ 'to go.' Both the derivations do not seem to be happy. *Adman*, however, suggests the meaning of 'one who enjoys' from *ad mat*, or figuratively from *adman* itself : 'a dweller in the body' which is its house = the soul.

* Asterisks indicate important key-words in Marāṭhī denoting greater affinity with the Sumerian words.

surrounded by farms and gardens, etc., and these are found only on the coast-line and not on the Ghāṭs.

4. *Ara-zu* (to pray), *oroj* (petition): Marāṭhī*: *árja*—petition. Borrowed from Persian and Arabic in recent historical times. *Cf. arz* (petition) in Brahui.

5. *Aśru* (place): Marāṭhī: *āśrā, āsrā, āsarā. Cf.* Skr.: *āśraya* from which the above words in Marāṭhī have been derived. *Cf.* Sindhi: *āsiro*—shelter.

*6. *Bad* (wall—of the city or of the fortress): The same sense is conveyed by the Marāṭhī words *wāḍā* (a palatial building with walled fortifications), *wāḍī* (a compact enclosure for the house and fields, etc.). The same Sumerian word is possibly retained in the Marāṭhī word *māḷváda* (a flat-roofed house with a sort of projection on the top).

7. *Bal* (to speak): *Cf.* Skr. *bal* 'to speak'—(MW. 675); but it is rarely used. The most common word in M. for 'speaking' is *bola* and it is derived from the Skr. *valh* or *balh*—to speak (KPK. '*Marāṭhī Vyutpatti Kośa*, p. 558). But these are seldom used either in classical or Vedic Sanskrit. Probably they are sanskritised forms of the Prakrit roots. The Skr. root $\sqrt{bal}$ is perhaps retained in the word *baḍabaḍa* in Marāṭhī.

8. *Banū* (to build): Marāṭhī: *banaṇē* to become, to be made up of), *banaviṇē*[5] to make, to construct, to prepare). *banāva* (prearranged plot) etc. It is a loan-word from the Semitic. *Cf.* Sindhi—*banāiṇu*—to make, form.

9. *Bar* (irritation): Marāṭhī: *Nibara*—irritating for the touch, hard, stiff. *Cf. Jñāneśvarī*[6]: nibaru 16·9; *nibarapaṇa* 18.183.

10. *Bar* (around, round about): Marāṭhī—*pāra* (embankment round a tree). *Cf.* Santal: *para*—neighbouring. Skr. *prākāra* (an encircling wall).

*11. *Biltu* (produce): Marāṭhī: *balutē*. In Mahārāṣṭra there were formerly 12 claimants in a village, for the share of the farm-produce in return for the services rendered. This share was called *balutē*. It is found in *Jñ.* 13.182: *balauta* (Panse 570).[7]

12. *Biśu* (hurtful, injurious): *Cf.* M. and Skr. *viṣa*—poison.

* The acute accent is indicative of stress on the Marāṭhī words cited in this paper.

5. The word is variously derived from the Skr. roots: *varṇay, van, paṇ* and Prakrit *bhaṇ* (KPK. 586) but in all probability it is of Semitic origin.

6. It is the most important of the oldest Marāṭhī texts dated A.D. 1290. References are from Dr. M. G. Panse's Index (DCRI, No. D. 38).

7. Suggested etymology: Skr. *bal* or *bhal*—'to give' (?).

13. *Bur* (vase, vessel) : *Cf.* Melanesian : *boro, bolo*—basket. Indonesian : *barok*—pot. Marāṭhī : *boḷkē, burkulē, buḍkulē, buṭkulē*[8]—a small earthen pot used as a toy by little girls and for minor religious rites.

14. *Buru* (reed, mat) : Marāṭhī : *boru*—reed ; *buruḍ*—a basket—or a mat-maker.[9]

15. *Dag* (affliction) : M. : *dágdág*—trouble, vexation, physical and mental worry, from the Sumerian $\sqrt{dig}$ or $\sqrt{dag}$—'to break to pieces'.

16. *Dag* (abide, repose) : Marāṭhī : *ḍāk* or *ḍāg*[10] (soldering), *ḍakaviṇē* (to cause to stick, to adhere, to hold fast together).

17. *Dagal* (vast, large, spacious) : Marāṭhī : *ḍagaḷa*—large-sized ; *ḍagalā*—a loose coat ; *ḍagalē* (Jñ. 1.7126).[11] *Cf.* Sindhi : *Dagaḷu*—a quantity of anything.

18. *Dandannu* (powerful) : Marāṭhī : *daṇadaṇita*—strong, powerful. *Cf.* Brahui : *daḍ*—strong, manly, hard-hearted ; *ḍaḍḍī*—strength.

19. *Dar* (split, detach) Skr. *dara*—'cleaving, splitting, cutting open'—MW. (402). Marāṭhī—*darakuṭā* (Jñ. 12.14 ; 13.59 ; 15.358)—small valley. *darī* (Jñ. 9.182 ; 11.344)—valley (Panse, 479).

20. *Dāku* (to slay): Marāṭhī : *ḍāku*—a plunderer, a marauder. The meaning of the word *ḍākiṇī*—" a kind of female imp or evil-being attending upon Kālī and feeding on human flesh " (MW. 356), corroborates this original sense of slaying. *Cf.* Brahui : *ḍak*—cut, incision.

21. *Danu, dannu* (strong) : Marāṭhī : *dáṇakáṭa, dāṇagā, dāṇḍagā*—strong, stout, robust.

22. *Dugud* (powerful, enormous) : Marāṭhī *dagáḍa*—stone (Jñ. 6.93 ; 9.444—Panse 478).

23. *Dul* (to cover) : Marāṭhī : *dulaī*—a coverlet.

8. Its derivation from Marāṭhī *buṭakā* (Skr. *baṭuka*)—' small ' seems to be incorrect if its cognates in Oceanian languages are taken into consideration.

9. MW. has recorded the word *buruḍa* as a Skr. word (p. 686). It is also retained in the later edition of 1899 A.D. See p. 735 and the reference given is to BhP (*Bhāgavata Purāṇa*, Sch.).

10. Derived from Skr. $\sqrt{ṭak}$; Sumer. $\sqrt{teg}$ (?).

11. It is derived from Skr. $\sqrt{dagh}$ which may be possible as MW. has recorded other senses of this Vedic root—' to move, to flow ' (398). The meaning given by KPK. (344) : *tyāge* is wrongly recorded as it properly belongs to the root $\sqrt{daṅgh}$ and not $\sqrt{dāgh}$. His surmise about *dukūla* as the origin of *ḍagalā* is also not very happy as it means a fine, silken garment, whereas *ḍagalā* is usually an overcoat.

24. *Dur* (to tie, to bind) : Marāṭhī : *dor*—rope ; *dorī*, *doru*—(Jñ. 8.252, 18.1396) —rope ; *dorā*—thread (Jñ. 13.1094, Panse 495).[12] *Cf.* Sindhi : *durī*—a kind of double necklace of gold beads.

25. *Eḍu, uḍu* (sheep) : Marāṭhī : *eḍakā* : Also in Skr. *eḍaka*—'a kind of sheep, a ram, a wild goat.'

26. *Emedu* (stand) : Marāṭhi : *Umeda*—hope (borrowed from Persian).

*27. *Gab* (breast) : Melanesian : *koba*—chest, bosom. Australian : *gabba-ru*—abdomen. Other forms : *kabbalo, gobal, gobālo*—stomach. Marāṭhī : *gábbára, gabára, gabru*—having surfeit of wealth, corpulent. It may also be possible to equate the words : *gabālā, gābāla*—having loose garments, akward manners and confused thinking, with the Sumerian base *gab*, in view of the above Oceanian forms.

*28. *Gala* (opening, mouth, chasm) : Melanesian : *gali*—mouth ; Muṇḍa : *gola*—neck, throat. Marāṭhi—*gaḷā*—neck, throat ; *gála*—a small cavity on the ground for boys to play ; *gallī*—lane. *Cf.* Sindhi : *galī*—lane, alley, *galo*—throat, neck.

*29. *Gan, kin* (field, land, soil[13]): Marāṭhī : *kuṇabī*—a farmer. So also Gujarati : *kaṇabī* = farmer. Probably the words *gaṇa, gina*—to count, to measure have the same origin. A measured piece of land is a farm and its owner *kaṇabi* or *kuṇabī*. The word *gunṭhā*—' a measure of land[14] ' may also be connected with it.

30. *Gig* (bad, wretched, sickly) : Marāṭhī : *jig-jig*—great physical and mental worry. *Cf.* Sindhi : *jija, jijā*—some evil thing thought to stick with force to one ; *gik*—an importuner. *Gig*—phlegm.

31. *Gir* (foot)[13] : Melanesian : *Kuria*—foot, leg. Indonesian : *kurur*—knee. Muṇḍa : *khuri*, hoof. Skr. : *khura*—a horse's hoof. Marāṭhī : *khūra* = hoof ; *khura-māṇḍī*—a sitting posture with a particular position of the knee.

32. *Gir*[13] (poniard, dagger) : Indonesian : *Kerat*—to cut ; *karit, kare*—sword. Mon-khmer : *kerāt*—to cut. Marāṭhi : *kárvat*—carpenter's saw.

33. *Gub*[13] (stand) : Marāṭhī : *gubārā*—holding up of the intestinal airs. *Cf.* Sindhi : *gubaṇu*—to allow to become stale by keeping ; *gubāru*—darkness, obscrurity, weight on the mind.

12. Prof. Jules Bloch regards it as a *deśī* word and in support of it gives the following two quotations : *davaro tantuḥ* (160.15) and *dāro tathā doro kaṭisūtram* (170-17)—*La formation* (p. 254) ; but in view of the above, it seems to have a different origin.

13. In Sumerian *g* and *ḳ* are interchangeable sounds.

14. A piece of land admeasuring one fortieth of an acre or 121 sq. yards.

34. *Gud*[13] (neck or face of an ox) : *Cf.* Skr. : *kakud*—' the hump on the shoulders of the Indian bull'. Marāṭhi : *kaku*—the protruding part of the neck (*gaḷyācī ghāṭī*). Probably an apabrahmśa from the Skr. *kakud* but retaining at the same time the original Sumerian meaning.

*35. *Gur* (to turn, return, come back) : Marāṭhī : *gurū*—the cattle that returns home in the evening from the grazing pastures. The original word seems to be *gura* in Marāṭhī also. *u* is an optional suffix of nouns ending in *a* in old Marāṭhī. The anusvāra distinguishes it from the common Skr. word *guru*—preceptor. Its plural form is *gurē* and not *guravē* which is a usual form had it been a word originally ending in *u*. For example : *āsū* (a tear)—*āsavē* (tears) ; *bājū* (side—*bājvā* (sides) ; *kusū* (a fence)—*kusavē* (fences) etc. Neuter nouns ending in *a* have these forms : *mūla* (a child)—*mulē* (children) ; *ḍhor*—(a big animal like a bull or buffalo)—*ḍhorē* (usually in the compound word *gurē-ḍhorē*) etc. The words *lekarū-lekarē*, *pākharū-pākharē* are analogous to *gurū—gurē*. The Sumerian term is significant and the cattle returning home every evening being the commonest sight the word must have been used, in its extended application, for cattle in the collective sense.[15]

*36. *Gur* (to purify by rubbing) : *Cf.* Skr. : *guḍa*. Marāṭhī—*guḍa*, *gūḷa*, *gula*—raw-sugar (Jñ. 10.33 ; 13.900 etc., Panse 415). The process of making raw-sugar is heating and churning the sugar-cane juice, adding purifying ingredients from time to time and taking out the impure substance till it becomes sufficiently thick and reaches the state of solidification.

37. *Hab* (affliction) : Marāṭhi : *hábakā*—shock, great monetary loss ; *hábakaṇē*—to suffer a physical shock, to extort. *Cf.* Brahui : *habaka*—stuttering, confused ; *happā*—overcome with sorrow or fear. Sindhi : *habak*—stammering.

38. *Hal* (to run) : Marāṭhī : *halaṇē*—to move ; *halaviṇē*—to cause to move *halavā*—a kind of sweetmeat or dish in the preparation of which a constant hustling of the principal substance to and fro is necessary while it is being fried in the clarified butter or syrup of sugar, etc. ; *halavāī*—a dealer in sweets, a confectioner.[16] *Cf.* Sindhi : *halaṇu*—to move, go, proceed, beat, pass, to have a sale ; *halāu*—sale ; *halāiṇu*—to cause to move.

39. *Halāku* (to escape, perish, run away) : Marāṭhī—*halākī*, *halākhī*—distressful condition, the state of not being able to sustain. Skr. $\sqrt{hul}$—to go, to

15. According to Prof. Jules Bloch, the etymology of the word is from Skr. *gorūpam* (having the shape of a cow). Its prakritised form is *gorūva* and it is found in old Marāṭhī. MW. records *gorūpa* as a Vedic word but it is not to be found in the *RV*.

16. Derived from Skr. *hval* — Deśī-prākrit *halla* etc. (KPK. 767). The Arabic origin of *halavā* seems to be improbable.

conceal; or $\sqrt{hval}$—to move, shake, trouble (MW. 1180). *Cf.* Brahui: *halāk*—worn out, tired. Sindhi: *halāku, halākhu*—bothered, tormented, wearied; *halākat, halākī-khī*—vexation.

40. *Hamāṭu* (hasten): Marāṭhī: *hamāṭūn, khamāṭūn*—elbowing out, dashing; *hamāmā*—a kind of violent sport in which there is a lot of bustle and uproar. Skr.: $\sqrt{hamm}$—to go (MW. 1165). *Cf.* Brahui: *halma*—to rush, run, run off.

41. *Hul* (to destroy, ravage, to cause injury): Marāṭhī: *hūla*—alarming news; *hūḷa*—riot, uproar, to hasten through fear.

42. *Hul-lah* (tremble, frighten): Marāṭhī: *hallā*—a sudden attack. Usually derived from the Persian word *hamlā*. *Cf.* Brahui: *hallā*—onrush, assault. Jāṭ—*hulla*. Baloch: *hallagh*. Pushtu: *halah*; Sindhi—*hallau*. Mal. Tel. Kan.—*alla* (?).

43. *Idān* (the two hands—as they are here): Marāṭhī: *idantā*—identity, being this (Jñ. 15.267). Ved. Skr.: *idā*—now at this moment. (MW. 139). So also *idānīṁ* in classical Skr. *Cf.* Sindhi: *itāṁ, itāṇḍo, ithām, ithāṇḍo*—Hence, from this place or time.

44. *Iku* (a measure of surface): Marāṭhī: *ekara*—4840 sq. yards. *Cf.* Sindhi: *ikī*—an odd number.

*45. *Ikun* (it is fixed): Marāṭhī: *ekūṇa*—the final total, the sum-total, in short.

46. *Inim, enem* (word): Marāṭhī: *imāna*—word, promise, loyalty (came through Arabic). *Cf.* Sindhi: *īmānu*—faith, belief, integrity.

*47. *Iśatu* (fire): Marāṭhī: *istu*—fire (a word used by the country people), *vistava*—its Sanskritised form. *Cf.* Brahui: *istar*—star.

48. *Iṣu* (tree): Skr.: *iṣikā*—reed, rush, etc. There being an abundance of reeds and rushes in Sumer it must have been generalised later to mean a tree. Marāṭhī: *iśāḍa, isāḍa*—a tree with a grafting esp. a mango tree in Koṅkaṇa; also the pole of a plough or a chariot (Skr. *īṣā*).

49. *Ka-gāl* (to reclaim injustice): Marāṭhī: *kāgāḷī*[17]—a complaint against some one.

*50. *Kanu* (a reed): Marāṭhī: *kaṇaka, kanaṅka*—a variety of bamboo.[18] The most common words, however, are *kaṇaṅga, kaṇagā, kaṇagī, kaṇagulē*, etc., meaning a kind of plastered basket of reeds for storing corn. *Cf.*

17. The etymologies *kāg* + *ālī* (*Mahārāshtra Śabda Kośa*, II. 657) and *kākali* (KPK. 152) do not seem to be correct.

18. Recorded by MŚK. (Vol. II, p. 566).

Sindhi : *kānu*—an arrow ; *kāno, kāni*—a reed-pen ; the top of the reed *śara* from the last knot upwards, used for making baskets, etc.

51. *Karnu* (horn) : Marāṭhī : *karṇā*—a kind of musical instrument—a variety of wind-pipe. *Cf.* Brahui : trumpet. *karnā.*

52. *Kaṣāru* (bind) : Marāṭhī—*kāsarā*—a rope. *Cf.* Skr. *kaśeru* or *kaseru*—a kind of grass of which these ropes must have been made.

53. *Kasū* (bind) : Marāṭhī : *kasaṇē*—in the expression *kambar kasaṇē*—to gird up one's loins and *kasū*—a small slender bag tied to the waist. *Cf.* Sindhi: *kasāru*—a kind of sweet-meat ; *kasaṇu*—to tighten.

54. *Kānu* (to be firm, resolute) : Marāṭhī : *kānū*—law, rule, condition, order. Loan-word from the Arabic.

55. *Kiśpu* (curse) : Skr. and M. : Vide *Hiraṇyakaśipu* and the story of his curse. (*Bh.* III. 16.32 ; *Padma.* 11.237),

56. *Kud* (to cut) : Marāṭhī : *kuḍa, kūḍa*—a mud-wall with bamboo rafters or reed-like substance inside (Jñ. : *kuḍe*—fence, hedge 11.363, Panse, 390). From Skr. *kuḍya.* Also from *kuṭ*—to tear asunder. *Cf.* Sindhi : *kuḍhi*—a kind of basket. Brahui : *kuḍḍi, kuḍī*—hut. (Tam. Kan. *kuḍi* = Skr. *kuṭi* = hut).

57. *Ku(a)lam, kanam, kanaga* (dialectical form) :—country, land, region. Marāṭhī : *kūla, kuḷambī, kuṇabī*—a farmer who has in his charge some land against annual rental or share in the produce ; a cultivator of land = Gujarati : *kaṇabī. Cf.* Skr. *kula* : " *haladvayena yāvatī bhūmiḥ kṛṣyate tāvatī bhūmiḥ*—Manu. VII.111 (KPK. 176).

58. *Kullatu* (Tolatity) : Marāṭhī: *kula* = the entire family ; *kula* = entire. full from the Arabic sources, *e.g. kúla-bāb, kúla-kānu*, etc.,in legal terminology adopted in Marāṭhī during the Muslim rule. *Cf.* Skr. : *kula*—family, multitude. Sindhi : *kulu* = all, universal (p. 64).

59. *Kustumburu* (grain-plant : Coriander) : Marāṭhī : *Kothimbīra* ; it is the most common household word of almost daily use. In Skr. MW. had recorded it in two variant forms : *Kustumbari* and *Kustumbaru* (1st ed. 244). The etymology suggested, viz. *ku tumburu* is absolutely wrong. In Sumerian *kustu* means 'a plant', and *buru* means 'fruit' or 'grain'. It is, therefore, 'a grain-plant' which is the distinguishing characteristic of the coriander.

60. *Lāh* (to go, to go here and there, to march) : Melanesian : *lago, lako* = to go, *rago, lago* = to march ; Muṇḍa : *laga*—to come, to go, to chase, to pursue. Marāṭhī : *lāga* = track ; *pāṭhalāga* = pursuit. Skr. : $\sqrt{lah}$—

to approach near, to follow closely. (MW. 858); also Skr.: $\sqrt{l\bar{a}bh}$ = to throw, to direct.

61. *Liśānu* (tongue): Marāṭhī: *rasanā* = tongue. *Cf.* Sindhi: *Lisāī*—unsavouriness, want of taste, insipidity; also *liso* = unsavoury, not spiced (food), p. 351.

62. *Lu*—man; *gad* = linen, garment. Marāṭhī: *lugaḍẽ* = a long cloth worn by men or women by wrapping round the body, especially below the waist. (Jñ. 11.3; 18.141; 18.740). The same word is to be found in Gujarāti. *Cf.* Brahui: *gaḍ* = wild sheep (p. 110).

63. *Ma'attu* (abundance, plenty): Marāṭhī: *mattā* = wealth, property; also, *masta*—plentiful, abundant—probably from Skr. *mahas* = abundance, fullness, superfluity, multitude.[19]

64. *Madattu, maddattu* = gift. Marāṭhī: *madata* = help, assistance. The same word in Sindhi. Through common source of Persian.

*65. *Mahrū* (Found to be existing before, earlier): This seems to be the proper etymology of the word *mahāra* in Marāṭhī,[20] meaning thereby that the Sumerians, when they came to the western coast of India, found this tribe of the *Mahāra* already settled in this part of the country and hence they called them *Mahrū*. In all probability they were the earlier emigrants from from Sumeria. It is a very faithful, valiant and intelligent race. In the ancient Hindu polity they were the hereditary village guardians and entitled to a share in the village produce, with a house and a farm of their own and certain special privileges. Being foreigners and outside the Aryan fold they were relegated to the fifth class in the Aryan Society.

66. *Malku, Malik* (king): Marāṭhī: *mālaka* = owner, proprietor, chief. Through the Arabic source. Skr. *māla*—an epihet of Viṣṇu (MW. 774)? Sindhi: *māliku* = master, lord, owner. *maluku* = delicate, elegant. p. 307.

67. *Mālaku* (way, path, extent of ground): Marāṭhi: *māḷa* = a barren land, Skr. *mālaka* = a wood near a village (MW. 774).

19. KPK. derives the word from a Kannaḍa source. (See p. 583).

20. The current etymologies are: *mahā* + *ari* = great enemy; *mahā* + *ārya* = a great gentleman; *mahā* + *ara* = living in the deep mountain caves; *mṛta* + *hara* = carrying away the dead. None of these is satisfactory. (See KPK. 583). *Cf.* Arabic: *mahār*—leading string, especially of a camel attached to the nose—(Brahui, p. 198); *cf.* also *mār* = son, boy, lad; Gond: *marri*, Kui: *mrī*; Tam-Mal-Kan: *maṛi*; Tulu: *mari* = young of animals. Brahui: *maṛ* = corpse: Jāṭa: *maṛh*; Sindhi: *maṛh*; Baluchi: *mahar*; Skr.: *mṛtakam*. Sindhi: *maharaḍī* = office or duty of a *mahajaru*—(a general discussion or representation or declaration of any matter) —p. 309; *meharu* or *emhāru* = one who keeps or grazes buffaloes, p. 326.

68. *Mithūṣu* (meeting): Marāṭhī: *mithī* = a close embrace. Skr. √*mith*—to meet or associate with, to unite, to grasp; also *mithus*—reciprocally, mutually (MW. 778); Sindhi: *midaṇu* = to meet, to throng.

69. *Mītu, Mutu* (dead): Marāṭhī: *maita, mayata* = dead. *mota, mauta* = death. Skr. *mṛta*. Sindhi: *maithu* = a corpse.

70. *Mudadu* (measure, ration): Marāṭhī: *muḍadā* = dead body, lying in full length; *murdā*. Ved. Skr. *mur, mūr* = a mortal (M.W. 785); Sindhi: *muḍa* = a corpse.

71. *Murub, murum* (grandfather-in-law): Indonesian: *muruhon, morohod, maravān* = old; Muṇḍa: *morubi, murubi* = an elderly man, chief of the family, an old man. Marāṭhī: *murabbi* = an experienced elderly man, connaisseur (Arabic source?). Sindhi: *murabī*—a patron (p. 321).

72. *Muś* (face): Marāṭhī: *muskaṭa* = face, contemptuous term; other derivatives: *muskāḍa* = the same as *muskaṭa*; *muskī* = a kind of noose for the face; *musaṇḍī* = rushing forward with face downwards and with a great force. *Cf.* Sindhi: *muskaṇu*—to smile. (p. 322).

73. *Nagga, Naggi* = lead. Santal: *nagad, nogod* = money; Marāṭhī: *nagada* = cash; *nagadī* = select, weighty. *Cf.* Brahui: *naghd* = hard cash (Arabic naqd); Sindhi: *nagadu*—cash, ready money.

74. *Nakāru* (hew, carve): Marāṭhī: *nakhara* = sharp like nails; *nakhalu* or *nakhasu* = a sharp instrument to cut the nails. *Cf.* Skr.: *nakhara* = sharp.

75. *Nu* (not): Marāṭhī: *na, nā, no.* Vedic Skr. *no* (*na u*), *na* (MW. 518).

76. *Lu'pab-hal-la* (a sick man, a patient): Marāṭhī—*pābalā*: insignificant, weak, low, mean (Jñ. 11.66, 2.362).

77. *Pad* (piece, morsel): fragment. Austro-Oceanic: *potā, pataki, potah* = to break to pieces; *pot* = to cut. Marāṭhī: *pātē*—a blade; *páda*—a part, portion. *Cf.* Skr. *pada* = foot, part, etc.

78. *Padanu* (route): Marāṭhī: *padavi* = a path (Jñ. 9.47, 10.135; 16.406). Skr. *padana* = one that goes or moves. *paḍanī*—a guide; *padvan, padvanā*—a road, path.

79. *Pahāru* (to assemble): Marāṭhī: *pahārā* = coming together of watchmen every three hours. *Cf.* Skr. *prahara*. *Cf.* Brahui *pahr*—fourth of a day or night; *pahra*—watch, sentry-go (p. 225).

80. *Paṭru* (a sword): Marāṭhī: *paṭṭā* = a long two-edged sword-blade.

81. *Pattu* (canal): Marāṭhī: *pāṭa* = canal.

82. *Paśāru* (to sever) : Marāṭhī : *pasāra* = breaking away ; *pasāra hoṇē* = to disappear. Sindhi : *pasāraṇu* : to expand or *pasāro* = expansion comes from Skr. *prasṛ* or *prasara* = to spread.

83. *Pazāru* (to be concealed) : Marāṭhī : *pāñja* = a kind of a large basket with small crevices to cover the fowls ; *pāñjaraṇa* = a sort of covering of grass, leaves or some other substance spread on the roof inside the tiles.

84. *Pānu* (face) : Marāṭhī : *pāṇī* = a shining expression generally used in connection with the face ; *cf. pāṇīdāra* = spirited. Sindhi : *pānau* = a brave man, a gallant person (p. 235). Ved. Skr. *pāna* = observing (MW. 560).

85. *Rakābu* (ride) : Marāṭhī : *rikibī* = a foot-rest while riding a horse ; *cf.* Arabic : *rakabe*. But see Skr. *rakh, rikh* = to go, to move (MW. 825). Brahui : *rīkhīb* = a stirrup (p. 251) ; Sindhi : *rikābu, rikebu* = a stirrup (p. 337).

86. *Reśu* (head) : Marāṭhī, Skr. : *ṛṣi*—as the head of the *gotra* (family). None of the etymologies from Sanskrit given in MW. seems to be happy. (See p. 181). Brahui : *rishi* = bearded person (p. 251).

87. *Rig* (to seize violently) : Marāṭhī : *righaṇē* = to rush forth, enter into. In Skr. *ragh* = to obtain,[21] more akin to the Sumerian.

88. *Śag* (heart, beloved, good, benevolent) : Marāṭhī : *sagā* = a bosom friend. It is found generally in the compound word : *sagāsoyarā* = friend and relation. Its derivation from Skr. *svaka* (KPK. 700) is evidently not acceptable. Sindhi : *sago* = a companion, a comrade. Probably from Skr. *sakhā* ; *sagāī* = relationship.

89. *Śag* (flood, surging tide) : Marāṭhī : *sāgara* = sea. Apart from the mythological story connected with *sagara*, it can be derived from Skr. *sagh* = to receive or *sag* = to cover (MW. 1044).

*90. *Śeś* (blood) : Marāṭhī : *śesa bharaṇē* : It is the most common custom among all the classes, especially the Marathas, to apply red turmeric powder to the forehead at the time of any auspicious function.

91. *Śibir* (stick, cane) : Marāṭhī : *śibira* = a temporary military camp, probably constructed with reeds or bamboo sticks or similar material. This is not recorded as a Skr. word by MW.

21. Prof. Jules Bloch gives its etymology from the Skr. *riṅkh* but it is difficult to delete the nasal in the process of prakritsiation. The root *ragh*, on the contrary, is nearer to the original Sumerian meaning.

92. *Śikaru* (a fermented drink): *Cf.* Marāṭhī *śikaráṇa* = milk mixed with crushed bananas and sugar added to taste. Ved. Skr. *śikhariṇī* = a dish of curds and sugar with spices; also a kind of vine.

93. *Śublu* (dwelling): Marāṭhī: *sobati* = a friend, a companion, a comrade probably living in the same house—a room-mate. It is, however, derived from the Arabic *sohbat* (KPK. 754).

94. *Śu-du* (to hold, to retain): Marāṭhī: *Śāḍu* = a kind of sticky mud used in making idols and pots. Skr. *śāda* = mud (MW. 1000).

95. *Śuplu* (cavity, hole): Marāṭhī: *supalī* = a flat bottomed basket with high rims on three sides. Skr. *Śūrpa* = winnowing basket.

96. *Śur* = furious: Marāṭhī: *Śūra* = brave, mighty, valiant.

97. *Ṣabāru* = to seize, take: Marāṭhī: *śabara*—a wild mountain-tribe which probably plundered the passers by.

98. *Sidi*, *Sidu*—upright: Marāṭhī = *sādhā*, *sādhāsudhā*, *sidhā* = straightforward. *Cf.* Sindhi: *sidikī* = true, sincere, honest.

99. *Sig* = full, *si-ig* = to complete: Marāṭhī: *śīga*, *sīga* = the apex of the measured corn; *śigelā jāṇē* = the state of filling the measure to its utmost capacity. *Jñ*. 7.22; 8.170; 17.141. etc. (Panse 735).

100. *Sugi* = to increase; *su* = to augment; *gi* = to grow, to bring in the produce from the land. Marāṭhī: *sugī* = full harvest.

101. *Sur* = to gush forth; to flow. Marāṭhī: *sūra māraṇē* = to rush forth into the water while swimming. Brahui: *suring* = to move. Baluchi, Sindhi: *sur*; Jāṭ = *surr*. (p. 268).

102. *Tar* = to cut, to tear off. Marāṭhī *ṭárakāvṇē* = to tear off; *ṭáraphála* = the pealed off outer covering of a nut. Brahui: *taring* = to cut. Tam. Mal. Kan. = *taṛi*; Tel. Tuḷu—*tari* (p. 268).

103. *Taslimtu* = salutation. Marāṭhī—*tasálmāta* = an advance for expenses, a donation, salutation (from the Arabic *taslīm*). Brahui: *tasalli* = consolation, comfort, reassurance (Arabic).

104. *Tura* = disease: Polynesian: *turoro* = sick; *turorori* = weakness; *turora* = to be weak due to want of nourishment. Marāṭhī and Sanskrit *ātura*—a patient.[22]

22. Derived from the root *ā tury* = hurt, injured; sick in body or mind, feeble, etc. (MW. 117).

105. *Tus* = to fix ; seat ; establish. Marāṭhī : *tusla*—a person who has eaten too much to enable him to move.

106. *Ubara*—protection. Mārāṭhī : *umbarā* = threshold which protects the door.

107. *Ud, ut, udu* = day. Marāṭhī: *udo*. Jñ. 2.16 ; 5.82 etc. *udaijaṇē*. Jñ. 16.319. *udeṇē* Jñ. 15.51—rising.

108. *Ug* = to die. Marāṭhī : *ugā, ugi, ugalā* = silent, inactive. Jñ. 13.266 ; 15.386 ; 3.163 etc. (Panse 351-52).

109. *Ugu* = engender, to beget. Marāṭhī : *ugavaṇē* = to grow, sprout. Sindhi : *ugaṇu* = to spring up, to rise, to shoot up.

110. *Ugnim* = army. Marāṭhī : *ganīm* = enemy. (Arabic).

111. *Uh* (*u*) = vermine. Melanesian : *uhu, uku* = a louse ; Polynesian : *uku*—small insect ; Marāṭhī *ū* or *ūṃ* = louse. Skr. *yūkā*.

112. *U-kūr* = *mākalu*—food. Marāṭhī : *ukáḍa* = cooked food—particularly flour of wheat or rice.

113. *Ul*—to shine ; star. Marāṭhī : *ulkā* = meteor. Skr. $\sqrt{ul}$ = to burn (MW. 115). Sindhi : *ulo* = a spark.

114. *Um, Ummu, Ama* = mother. Indonesian : *ma, uma, amai, yāma* ; *Muṇḍa* : *umā, māy, mā-ṁ*. Marāṭhī : *māy, ambā, ammā, ā-ī*. *Umā* is the name of the Mother-Goddess Pārvatī. It may be of Sumerian-Muṇḍa origin. *Cf.* Kālidāsa, *Kumāra*, I.26.

115. *Zar* = to shine, polish. Marāṭhi *jára* = a silver or gold thread used in preparing an apparel. Brahui : *zar* = gold (p. 300).

116. *Zal—Zalag* = shine, light, splendour. Marāṭhī : *záḷa* = warmth, heat ; *zalāla* = powerful light. Jñ. 13.470. *zalakṇē* = to shine : Jñ. 9.217. Sindhi : *zalk, zalko* = lustre, splendour.

117. *Zal* = to flow in, *azal* = flowing water. Marāṭhī *jáḷa* = water. *zarā*, *zarī* = spring.

118. *Zil* = shine. Marāṭhī—*zīla* = light. Jñ. 13.213. (Panse 456) ; *zilaī* = polish.

119. *Zi-ir* = to fall down. Marāṭhī—*zaraṇē* = to flow imperceptibly ; *zirrapṇē* = to ooze. Sindhi : trickle. Brahui : *zir* = to run in haste (p. 312).

120. *Ziri, zi-ir-ri* = to burst, to crack, to break to pieces. Marāṭhī : *ziraṇē* = worn out ; *zirazirita* = thread-bare. Cf. Sanskrit : *jarjarita*.

POTS AND UTENSILS FROM JAINA LITERATURE

By

S. B. Deo

According to the Jainas, the art of pottery-making has a remote antiquity. It is stated in one of their sacred books[1] that the first Tirthaṅkara Ṛṣabha introduced "the three occupations of men"—*viz.* cooking, sculpture and pottery-making. It is however, impossible to date the period of Ṛṣabha as the Jainas attribute an antiquity to him which defies all imagination.

For a systematic survey of the development of the ceramic art one expects a mass of evidence which has a somewhat connected history. Unfortunately this factor is absent in the development of Jaina literature—both canonical and otherwise. Hence, what we have is a body of literature not only far removed from the period of the first Tirthaṅkara but such as has undergone a process of change and a series of redactions.

Another difficulty is the lack of proper explanation of a particular term denoting a vessel. Many times, the commentators explain a particular term simply as 'pātraviśeṣa' i.e. a kind of pot. The Jaina dictionaries also do the same, though in some cases, they tend to give more explicit meaning. With these limitations, therefore, an attempt is made here to collect and systematise all information as found in the Jaina literature regarding the art of pottery-making, shapes of vessels, and various materials used in the making of utensils.

The potter's workshop

The Jaina monks often stayed with potters and ironsmiths and their literature provides numerous details about a potter's house and his workshop. The general term for a pot-maker was Bhaṇḍāra (bhāṇḍakāra) or Kumbhakāra, while the person who earned his livelihood by selling earthen pots was called as Kolāliya (kaulālika). This was about those who maintained themselves by making and selling earthen pots. But those who made and sold vessels of metal like copper or brass were called *Thaṭṭhāra*.[2]

It seems that the workshop of a potter had a few apartments. For instance, the place where he made the pots was called Kammasālā (karmaśālā), and the place of baking the pots was termed either as Kumbhārāvāya (kumbha°kārā°pāka),

1. *Kalpa-sūtra*: *SBE.* XXII, pp. 281-5; Comm. pp. 200ab.
2. Words in italics are 'Deshī' in origin.

or Iṁgāradāha (aṅgāradāha), or Pacaṇasālā (pacanaśālā). The store-room where fuel like grass, etc. was stored was designated Indhaṇasālā (indhanaśālā); the place where the baked pots were stored was termed Bhaṇḍasālā (bhāṇḍaśālā); and his room where the pots were kept for sale was called Paṇiyasālā (paṇyaśālā).

The process of making a pot

It seems that a particular kind of earth was used for the making of different pots. One comes across a term called Soraṭṭhiyā (saurāṣṭrikā), a kind of earth peculiar to Saurāṣhṭra.[3] But it is not clear whether it was used for pot-making or for some other purpose. One thing, however, is clear that various types of earth had different names either geographical or qualitative. But the data to determine their nature is not available.

The method of making a pot seems to have been the same as most of the modern village potters employ. A lump of clay was sometimes mixed with ash (chāra) and dung (karisa) as binding material which is technically called 'degraissant'. It is to be noted that in many of the rough varieties of pots recovered from archæological excavations, materials such as sand particles, straw etc. are to be found.

Keeping the lump of clay on the wheel (cakka), the potter gave a rotating motion to it and fashioned variously shaped pots. It seems that there were different technical terms used for the various stages of a pot before it was ready for sale. For instance, the term Sivaka or °ya (śivaka) denoted a stage in which the pot was not complete. If the pot was not well-baked or was over-baked, it sometimes gave way, and the piece of a broken pot was called *Ṭhikkariyā* (*Cf.* Marāṭhī Ṭhikarī).

While the pot was on the wheel, the potter applied a thin coat of very fine, liquidish clay in order to smoothen the surface of the pot by filling the pores etc. This is what is called a mechanical slip,[4] and the pot in which the potter kept such a fine liquidish coating material was called Āyaṁcaṇiyā (ātañcanikā). He many times painted the pot, and the vessels in which the paint was kept nearby were called Alinjara or Kalanda.

A great many details are to be found regarding the application of oil in the case of pots used by the Jaina monks. It may be noted that the monks were allowed to use only three kinds of pots: either of gourd (lāu: alābu), or of wood (dāru) or of earth (maṭṭiyā)[5]. Hence the details given regarding the burnishing or polishing of the pot with oil apply to these three varieties of pots. It, however, testifies to the practice of burnishing of pots widely prevalent at that time among the potters.[6]

3. This may be Kaolin.
4. See HARRISON, H. S., *Pots and Pans*, pp. 45-6.
5. *Ācārāṅga*, II, 6, 1, 1, (p. 166); *Ṭhāṇāṅga*, p. 138a.
6. For details on 'slip,' 'burnishing' and 'polishing' see *The Annual of the American Schools of Oriental Research*, Vols. XXI-XXII, 1941-3, pp. 104ff.

A monk who had to coat his begging pot had to seek the permission of his guru beforehand. The coating material consisted of the oil used for lubricating the wheels of a bullock-cart.[7] If that was prepared out of bitter oil (kaḍugandha) then it was not to be used, as it did not properly stick to the pot. If, on the other hand, the coat (leva) consisted of sweet sesamum oil (miṭṭhatilatella) then it was to be accepted. The excellent coating material consisted of sesamum oil (tila), the medium quality was that of atasi, and the oil of mustard (sarṣapa) was ranked lowest in the list. The pots of the monks were never coated with butter, ghee, molasses, fat or salt.[8]

Taking the cart-oil in a pan (*mallaga*), covering it with ash so that living insects may not fall into it, and spreading a piece of cloth over the mallaga, the monk came to the monastery. Then he strained it with a piece of cloth, and taking a piece of cotton (*rūya*), he applied the coat or the oil to the pot. Then he rubbed the material well over the pot with a polishing stone called variously as Ghaṭṭaṇaga (ghuṭṭanaka), or Ghuyaga, or Ghuṭṭaga, or Ghaṭṭaga. It may be recalled that this process is similar to the practice of modern potters who polish a pot with a string of glass beads which are called matũhā, after applying oil to the baked pot so as to give an effect of burnishing or polishing to the surface of the pot. It may also be noted that the pot was rubbed with the stone after the application of oil—the latter serving as a medium of polish. Such polishing stones were amply available at a place called Bhogapura which was situated in between Pāvā and Vesālī.[8a]

When the pot was thus coated, it was spread over with a spray of ash (chāra) so that no insects stuck to it. Then covering it with a piece of cloth, it was kept in the sun for drying. After it was dry, the ash was washed and again another coating was given over the pot. The minimum number of coatings was one, the normal two, and the maximum five.

The pots were coated early morning so that they could easily get dried during the rest of the day. Kṛttikā (May) and Viśākhā (November) were deemed to be the proper Nakṣatras for coating the pot obviously due to the fact that there is enough and clear sunshine during these Nakṣatras.[9] In winter the pot was not kept out drying in the first quarter (porisī) of the day. In the fourth quarter it was to be kept inside in shade for drying. In summer, drying was done anytime

7. *Ogha-niryukti*, 377ff; *bhāṣya*, 202ff; *Bṛhatkalpabhāṣya*, Vol. I, 471-529.

8. *Ogha-n.* 381, 394; *Piṇḍa-niryukti*, v. 15, comm. p. 9b. It is not possible to locate exactly Bhogapur. But Pāvā is the modern Pāvāpurī, seven miles to the east of Bihar town in Bihar, and Vesālī is modern Basarh in Muzaffarpur Dist. of Bihar. Bhogagāmanagara is referred to in Pali texts like *Dīghanikāya* (II, p. 126) and *Suttanipāta* (V, 1.38); See, Dey, N. L., *Geographical Dictionary* (1927), p. 155; Law, B. C., *India as described in early texts of Buddhism and Jainism* (1941), pp. 52-4; Jain, J. C., *Life in Ancient India*, pp. 268, 274.

8a. Whether this has any connection with the technical process of "Salt-Glazing" cannot be said (H.D.S.)

9. *Gaṇividyāprakīrṇaka*, 36-7.

except in the half of the first and the last porisī of the day (as the sun is weak at that time).

If the dried pot gave way and a new one was not available, then the monk tied the broken pot with strings in different methods such as mudrikābandha, gomūtrikābandha and stenakabandha.[10]

Various materials used

It may, however, be noted that even though earth was principally used in the manufacture of pots, other materials such as metals, wood, skin and ivory were also employed. For instance, the *Ācārāṅga Sūtra*[11] forbids a monk to use pots made of iron (aya), copper (taṁba), lead (sīsaga), silver (hiraṇṇa), gold (suvaṇṇa), glass (kāya), tin (tau), brass (riṛīya), silver and copper (hārapuḍa), pearl (maṇi), bell metal (kaṁsa), horn (siṅga), ivory (danta), cloth (cela), stone (sela) and leather (camma). This shows that people at large did use utensils and receptacles made of such a wide variety of materials. It seems possible that only the rich classes of the society used pots of precious metals. Such a precious and costly pot was termed Varaga.

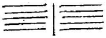
The most common terms which designated pots made of these metals etc., were coined by adding the words 'pāya', bhāyaṇa, or patta (pātra, bhājana) as a suffix to the name of that particular metal, as for instance : tambapāya, (tāmra°) hiraṇṇapāya (hiraṇya°) etc. But besides these, we come across a number of terms which specified a pot made of a particular material.

For instance, the most general term designating a wooden vessel was Dārupāya (dārupātra), but the term *Ḍoa* specified a wooden ladle used in serving either vegetable or any preparation of gram. Its exact counterpart in Marāṭhī is the 'Ḍāva' and the Gujarātī 'Ḍoyo' which still serves the same purpose. The other terms such as *Caṅgavera* and Ullaṅka (ullaṅka) are not easy to explain though it is certain that they were made of wood.

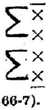
Besides wood, the next favourite material was the bamboo which was used mostly in making boxes. For instance, *Pacchi, Caṅgerī*, Piḍiā (piṭikā) referred to either a basket or a box, while the term *Pūraṇa* meant a winnowing basket made of bamboo.

10. *Ogha-niryukti*, comm. pp. 145b, 146a.

Mudrikābandha



Stenakabandha



11. *SBE*. Vol. XXII, II, 6, 1, 1-3 (pp. 166-7). *Dasaveyāliya*, 6, 51-8.

Bamboo was also employed in making receptacles for special purpose. The Kilañja (kiliñja) referred to a receptacle in which fodder or any other food was offered to cows. The *Dalla* or *Dallaga* was used to keep fruits and flowers, while the *Chabbaya* was used to strain ghee etc. Kiḍhiṇa (kiṭhina) was a vessel used by ascetics. The terms *Kaliñja* or *Kalimba* and *Patthiā*, °piḍaga also designated peculiar vessels of bamboo.

Leather was used principally to store either water or oil or ghee. *Kuua* (kutupa) and *Tuppa* were vessels of leather which were used in storing either ghee or oil, while *Cirikkā*, Dai (dṛti) or Dii were used for storing water. *Doddia* was another receptacle made of leather the purpose of which, however, is not clear.[12] It seems that the mouth of some pots was sealed and tied with leather with a view to preserve the contents. Such a pot was termed Daddura (dardura).

Other materials such as gourds, coconut, ivory or teeth, leaves, horn and cows' hair were also used in the making of certain pots. *Kuuā* designated a vessel made of gourd—such vessels being used even now by the Fakirs in India. Pots made of coconut which were used in drawing water were called as *Ḍuṅgha*.[13] The terms Dantapāya (dantapātra) and Siṅgapāya (śṛṅgapātra) fail to explain their shapes and purpose, except the fact that they were made of ivory or teeth and horn respectively. Similarly the term Puḍa (puṭa) referred simply to a receptacle made of leaves etc. which was used in preparation of certain medicines. The most interesting, however, is the term Vālaga (vālaka) which designated a receptacle made of cow's hair.[14]

That metals like iron, copper, bell-metal (an alloy of copper and tin) and silver were also widely used in pot-making is clear from several terms indicative of such utensils. For instance, the words Kaḍāha (kaṭāha), *Kaḍilla* and Lohī (louhī) indicated big pots of iron, the first suggesting affinity with a similar vessel in Marāṭhī called Kaḍhaī used for frying and boiling. The general term for a pot of bell-metal was Kaṁsapāya (kāṁsyapātra), while Karoḍiyā (karoṭikā) or Karoḍī, *Ḍiṇḍima* and *Resaniā* or *Resanī* indicated vessels of such a metal. Rayaṇavatta (rajatapātra) was a general term indicative of a vessel of silver, while *Candālaga* was a peculiar vessel of copper.

Varieties of shapes

With this wide variety of material used in pot-making, it was quite natural that the pot-maker should evolve a good range of shapes. It is, however, not possible to

12. *Cf.* Gujarātī 'daḍīyā', a bowl-like vessel of green or dry leaves. I am thankful to my guru Dr. H. D. Sankalia for supplying me several Gujarātī equivalents.

13. A pot made of earth but exactly similar in shape and appearance to a coconut was recovered in excavations at Nasik, and could be assigned to c. 2nd Cent. B.C. The report on the excavations at Nasik conducted by the Deccan College is in press.

14. *Cf.* The Vedic practice of passing the Soma juice through the strainer prepared from the hair of a goat ('*avyam vāram*', ṚV. IX, 13, 6; IX, 61, 17 etc.).

classify these shapes for, as remarked elsewhere, the commentators and the dictionaries fail to define the exact shapes. In some cases, however, it is possible to explain these with the help of modern counterparts and the suggestions of a possible shape as given by Prakrit Dictionaries.

Instructions regarding the normal shape of a good pot were issued to Jaina monks. For instance, the normal size (majjhima pamāṇa) of a pot to be used by a monk was such as to make it fit in a thread three 'vihatthīs[15]' and four aṅgulas in length held in a squarish position. Pots which were prefectly round (vaṭṭa), of symmetrical build, and good colour (vaṇṇa) or polish were deemed fit for monastic use.[16] On the other hand, vessels with uneven surface (huṇḍa), those which suddenly got dried, contracted and wrinkled (vāyāiddha), and which were broken or had a hole (chidda), were unfit for monks. The mouth of the pot was expected to be as large as to allow one's hand to get in without touching the rim (uṭṭha) of the pot.[17]

With these general principles about the shape and quality of a normal pot, the potters fashioned variously shaped vessels for a number of purposes. The following classification is based entirely on the meaning given in the dictionary.[18]

A majority of the pots seemed to have been in use for the purpose of either fetching or storing water. It is quite possible that some of the terms—as for instance, Kalasiyā (kalaśikā), Gāyari or Gaggari (gargarī) and Ghaḍaga (ghaṭaka) which are still in use, suggest the same shape as is current in modern times. The Kalasiyā and Gāyari or Gaggari were probably the same as the modern Kaḷaśī and Ghāgar in Marāṭhī which are still used[19]—the former being smaller than the latter. Other pots used in storing or fetching water were the *Kayala* (a big ghāgar), Karaga (karaka) a small pot, Udagavatthi (udakavasti) a storage jar, Kuṭṭa (kuṭa), Kuḍa (kuṭa), *Goā* (small ghaḍā), Dagavāraga (dakavāraka) a small ghaḍā, *Vāra* and *Vāraga*. It is interesting to note that the word *Rañjaṇa* (storage jar) is still current in Marāṭhī (rāñjaṇ). The terms *Maḍakka* or *Maḍakkiyā* meaning a small earthen vessel are still in use in Marāṭhī (maḍake) and Gujarāti (maṭkā) which designate generally a small vessel with a rounded base and a broad mouth. It is quite likely that the general terms Kumbha and Kumbhi were used for storage jars, perhaps, with rounded bases—the latter being smaller than the former.

Next to storage jars come the utensils used for cooking purposes and other domestic use. For instance, the words Taviā (tāpikā), Tāviā, Tavaga, Tavaṇī, indicate an utensil similar to the modern toasting pan which is made of iron, is

15. Vitasti, a kind of measure consisting of twelve aṅgulas.
16. *Ogha-niryukti*, 680-3 ; 686.
17. *Ibid.*, 690.
18. SHETH, H. T., *Pāiyasaddamahaṇṇavo*, Vols. I-IV, Calcutta.
19. Also in Gujarāt.

shallow, and goes under the name Tavā in Marāṭhī.[20] The term Avavakkā (avapākyā) also indicated a small toasting pan. The *Kāhallī* or *Kāhilliyā* though explained by the Dictionary as a frying pan used in preparing pūris etc., tend to show similarity with the Marāṭhī ' Kāhaḷ ' which is, however, made of iron, is very big and used in boiling sugar-cane juice in the preparation of molasses even now.[21]

The use of dishes (Thālī) seemed to have been quite common as we come across a number of terms connotating that meaning. The most general terms were the Thālī (sthālī) or *Thalliyā*. A Thāla (sthāla) implied a bigger dish as is clear by even the modern Marāṭhī words, *viz*. Thāḷī and Thāḷā. The other terms indicating a dish are *Ukkhaliyā*, Ukkhā (ūkhā), Caru, *Jaṇha*, *Pariala* or °*lī*, Piḍhara (piṭhara) and Bhaṇḍiā (bhāṇḍikā).

Lids are also mentioned though it is difficult to know their exact shape. The most general terms used to denote a lid or a cover were the Paḍipillaṇa (pratiprerana), Pindhaṇa (pidhāna), Pihaṇa, Pihaṇiā and *Dhaṅkaṇī*—the last having parallel words in Marāṭhī (*cf*. Ḍhākaṇa or Jhākaṇa) and Gujarāti (ḍhāñkaṇu). The *Thagaṇa* (sthagana) or Chagaṇa also indicate any covering device. The details of the term *Maṇḍī* are lacking even though it means a cover or a lid.

The Kuṇḍā shaped[22] round vessels which are smaller than the Thāli but are thicker and less shallow as are current today, were also in use as is indicated by the terms Kuṇḍa or Gola, °ga, °ya. Other terms specifying such vessels are the Kalanda, Goliyā, Nanda and Doṇī (droṇī)—the last indicating a big Kuṇḍā used for water.

There are terms indicative of other shapes as well. For instance, the terms *Koḍia*, *Kosaya*, Vaddhamāṇaya (vardhamānaka) and Sarāva (śarāva) are explained as vessels similar to modern Śarāva, while the terms Kaṭṭoraga (kaṭṭoraka) and Karoḍaga (karoṭaka) indicate similarity with the modern Kaṭorā (a bowl with a round base).

Smaller vessels like drinking glasses or cups are denoted by terms like *Vaṭṭa* (Marāṭhī : Vāḍgā ; Gujarātī : Vāṭko)[23] and Vāra. Terms like Kaṁsa (kāṁsya) and Kaccola are also explained as cups.

The existence of spoons or ladles is testified by the most common words Camasa (Hindi : Camac ; Marāṭhī : Camcā ; Guj. Camaco), and Davvī (darvī) even though the *Kaḍacchu* (*Cf*. Guj. Kaḍachi, a spoon with a long handle and deep, bowl-like front) and Kambi also inicated the same. Another interesting term is the

20. Similar name in Gujarāti also.
21. Small frying pans are called ' kaḍhāī ' (Guj.).
22. Kuṇḍā (Sk. Kuṇḍa) means a deep-based basin.
23. Varta, Vartaka possibly suggest a rounded bowl.

Gallola which, as explained by the Dictionary, seems to have been similar to the Marāṭhī Gaḍu which is a small vessel used in drinking water.

There were also other vessels of a very peculiar shape. For instance, Kuṇḍamoa (kuṇḍamoda) was a vessel similar in shape with the leg of an elephant; the Thāsaga or °ya (sthāsaka) was a mirror-shaped pot. The Chiddakuḍḍa (chidrakūṭa) was most probably a perforated pot, the Bhiṅga or Bhiṅgāra or °ka, or °ga, (bhṛṅgāra), explained as Jhārī, might have been a spouted vessel, and the Palla (palya) which is described as a round receptacle used in storing grains was probably similar to Marāṭhī Kaṇagī made of earth and bamboo. The word Karaṇḍi explained as a box was possibly similar to modern Karaṇḍī (Marāṭhī) made of either cane or bamboo. Manjūsā (mañjūṣā) also designated a small box or casket.

Pots with special purpose or specific use

The shapes of pots were made many times to suit the purpose for which they were used. These had special names. For instance, we come across a number of terms which denoted vessels associated with either serving, preservation or drinking of wine. The *Āvareiyā, Uvaciā, Kariā* and *Kattalaṅkā* were vessels which were used to serve wine. The *Tokkaṇa* or *°khaṇḍa* were pots with which wine was measured, while the Casaga (caṣaka) and Khaṇḍa denoted drinking cups. The vessels in which wine was stored were called *Jambula, Pāraya, Bhumbhala* and Soṇḍiyā (śuṇḍikā).

A number of vessels were used specifically for cooking purposes. Some have already been noted when dealing with shapes. Besides these, there were some like the *Idura* which was a covering lid, the *Iḍḍaraya* used in covering the cooked food, the Kandu in which sweets were prepared, *Kavalli* or *°ī* in which preparations of molasses were cooked, the *Kuntala* with which food was served, Kumpaya (kūpaka) in which oil was kept the Kusūla (kuśūlaā) a big utensil in which food was kept, and the Suphaṇi in which buttermilk was heated or boiled. It has already been noted that vessels of leather like Tuppa and others were used for storing ghee etc. Along with these, gourd-vessels were also in use as the term Duddiṇiā or Duddhiṇī shows. It was used for keeping oil and might have been made out of sweet vegetable gourd which is called Dudhyā Bhopḷa in Marāṭhī. Oil was also kept in earthen vessels like the Tellapalla (tailapalya), and Kūviyā (kūpikā).

A wide range of utensils was used for other domestic purposes. This is corroborated by terms like Udaṅka, Udagavatthi (udakavasti), Ullaṇiyā (ārdrayaṇikā), *Karava*, Karavatthiā (karapātrikā) and Karaviyā which indicated various kinds of vessels used for the purposes of water. The term Udagadoṇi (udakadroṇi) denoted a small pot a series of which was tied to a wheel or machine for drawing water up from a well. (*Cf.* Persian wheel). Gourd-shaped earthen pots are still used in Gujarāt and Mahārāṣṭra for similar purpose even now.

Thaiā (sthagikā), *Doṅgilī*, *Doṅgī*, and *Haḍappa* or °*ppha* denoted vessels in which betel-leaves were kept. The modern counterparts of these are invariably made of brass. The Dhūvaghaḍi (dhūpaghaṭi) or Dhūvajanta (dhūpayantra) were used for incense burning ; the Mathaṇiā (manthanikā) for churning butter-milk, and the *Pārī* and *Sīaṇaga* were pots used for milching cows. That there were special vessels used for feeding the birds is indicated by the terms *Paviā* and *Siriddaha*, while the *Landaya* and the Gokilañjaya (gokilañjaka) were vessels in which food was given to the cows.

The finer tastes of the people are indicated by the fact that there were certain pots which were solely used as flower-pots denoted by the words *Piṇḍalaga*, Puppha-cchajjiyā (puṣpachādikā), and *Dallaga*, the last being made of bamboo. The Siṅgiyā (sṛṅgikā) denoted a syringe with which water was sprayed. There was also a special pot in which tooth-powder was kept. It was called *Suvaṇṇālugā*.

For medical purposes the Puḍa made of leaves etc., was used, and for melting metals like gold etc., a crucible—mūsā (mūṣā)—was used.[24] For writing purposes, ink was kept in an inkpot which was termed as *Khaḍia*,[25] while the *Ṇiāraṇa* indicated a small vessel used for sacrificial purposes.

Pots of monastic use

It has already been noted that the Jaina monks were allowed to use pots made either of gourd, wood or earth. The general term indicating a begging-bowl, was Paḍiggaha (patadgraha). The Kamaṇḍalu was another such receptacle made of either wood or earth and used by ascetics. Besides this, only the Jaina monks used other vessels termed as *Tupparaga* and *Tappaṇaga*. The *Khaṭṭaṅga* was a peculiar bowl used by the Jaina monk while begging when he was undergoing a punishment for a fault.

Other associated terms

There are many other terms which denote things or objects connected with pots. For instance, the term *Satti* denoted a stand for a water-vessel, while Candanaghaḍa or °kalasa or Vandanakalasa indicated auspicious pots. It may be noted that in Bengal, Mahārāṣṭra, Gujarāt and probably elsewhere there is a custom to keep a series of pots painted with red colour or with kumkum at the time of marriage ceremony.

A series of pots kept one above the other was called as *Uttarividi* or *Uttivaḍā* which has an affinity with the Marāṭhī word Utaraṇḍa denoting the same sense.

24. Glass enamelled crucibles of terracotta were found in Nasik excavations from layers belonging to c.2nd-3rd Cent. B.C.

25. Even now in Gujarātī it is Khaḍiyā.

Sometimes, the pots were sealed with something. This act was termed as Ṇikko-raṇa (niṣkoraṇa). It has already been noted that sometimes the pots were tied with leather covers. It is interesting to note that old, dilapidated pots were denoted by a special term—*Tuṇḍūa*.

Miscellaneous and indeterminate terms

Besides the terms noted above, there are several others which are not clear and are not explained either by the commentators or by the dictionaries. It will suffice here simply to note them. Out of such pots, Kelāsa (kailāsa), Kolāla (kaulāla), *Daharī* and *Boḍakuḍḍa* were earthen vessels, while *Kaḍambhua*, *Kalovāi*, Khaūrakaḍhiṇaya (khapurakaṭhinaka), Gaṇḍavāṇiyā (gaṇḍapāṇikā), *Ḍhiṅkaliā*, and Suṅṭhaya (śuṅṭhaka) cannot be described properly. The *Vaṭṭu* was probably a small Vaṭṭa (*cf.* Vāḍgā in Marāṭhī), a bowl with a round base.

General observations

A survey of the terms associated with pots and utensils as found in the Jaina literature thus reveals an amazing range of shapes and materials used in the manufacture of vessels. From gold to earth, from domestic to monastic purposes and from storage jars to flower-pots, the skilful hand of the potter gave a concrete shape to his creative faculty which produced a rich variety of pots and pans.

EXCAVATION REPORTS: THE READER'S VIEWPOINT

By

D. H. GORDON

Though the matter of writing excavation reports has been dealt with at some length by R. J. C. ATKINSON in his book *Field Archæology*, it finds no place either in Badè's *Manual of Excavation in the Near East* or in Miss KENYON'S *Beginnings in Archæology*, and even in the first mentioned publication many troublesome lapses seem to have passed unnoticed; so, having struggled with varying degrees of success, not solely conditioned I fondly hope by the I.Q. of the reader, to extract all possible information from a number of such reports, I make bold to put forward certain suggestions from the student's point of view. Those who write these reports, fortified by that sense of omniscience of one who, as a first-hand observer, has seen it all, will accord the views of that quaint object the reader pitying smiles, tinged no doubt with irritation that one who may consider himself lucky to get what they give should utter a squeak of criticism however small. But he has to read their stuff.

Presumably what we wish to get from an excavation report is information that will help us to produce the framework of or fill the gaps in our knowledge of the story of cultural history. It is nice therefore that there should be no doubt whatsoever where the excavation took place. There must be a general map, at about two miles to one inch or similar appropriate scale, with an inset showing this area shaded on an outline map of the country, Iraq, India etc. as the case may be. On this map will be marked the excavation site in relation to the adjacent towns, rivers and main roads: for it is no exaggeration to say that one has encountered maps conforming very closely to the chart with which they hunted the Shark. We must be told also why the site was selected—important geographical factors, historical importance or just a blank spot in our archæological knowledge.*

We are now in the picture level with the excavators' when they decided to dig. Having selected the site, we should now like to know what their plan was for its excavation, what conditioned the choice of the exact spots excavated, how much could be dug over-all horizontally and how much was tackled vertically to give the maximum information of successive strata. Along with this must be a site plan with excavated areas clearly marked and, where a recognizable pattern of structures exists or emerges, there should if possible be at least one good air photograph. At this point it seems usual for those compiling the report to interpolate a section

* Nowadays almost all excavation is S.O.S. work before destruction by host of forces ranged against us.

giving a brief but sufficient summary of the results of the dig so that writers of comprehensive books of general archæology need read no further, if indeed they have read as far, but, having an idea of where and what, can take some notes and grab another volume.

Those, however, who want more details will read on through the next section which will tell them what the excavators uncovered. It is to my mind a waste of time to describe the strata as unearthed from top to bottom and again as cultural levels in the reverse direction. Having the whole information at their disposal, it should be possible for the excavators to work from the bottom up and describe the levels in their proper chronological order, numbered successively with the lowest as 1 or A, as this will make the descriptions of soil changes and the appearance of made floors, refuse pits, new structures etc. more intelligible. There must be plans of all structures of various periods uncovered horizontally and these must be related to the diagrams of sections.

I have been asked whether it is right to draw lines between the strata in section diagrams and this leads one to examine what the purpose of these sections may be. Presumably it is to show in a line-drawn figure details difficult to convey in a photograph; so only those things that can be seen should be recorded, *i.e.* soil changes including "floors," structures including paving, and notes indicating the presence of artifacts particularly those with dating value. Now about these drawn lines: of course, if excavators will draw lines across the section with the point of a trowel, then these are likely to appear in the photographs and therefore in the diagrams of soil sections. I consider such lines to be undesirable. Then there is the numbering of successive strata; either these numbers have value and meaning or they have not. If they are nowhere mentioned in the report it would seem that they have neither and should not clutter up the figure. No line should be arbitrarily drawn across an undifferentiated vertical soil area; if there is a cultural change this can be indicated marginally. Conventional soil depiction should be done intelligently; this is most clearly brought out by Sir Mortimer WHEELER in Fig. 2 of the Technical Section at the end of *Ancient India* No. 3, and I feel that where sections are adjacent to one another, the conventional soil depiction and the strata numbering must conform so that one section can be linked with the other.

It is I think generally accepted, but not so generally adhered to, that this part of the report should describe only the stratification and give an interpretation, if such be possible, of the soil and structural changes. It is found however that objects unearthed tend to be mentioned here in a haphazard way, and it is better that they should not be mentioned at this stage at all. We should now have a complete picture of the site, its whereabouts, its appearance, its significance, the way its excavation was tackled, the stratigraphical succession of occupation debris and the plans and description of any structural remains. We now want to know what the excavators found and where they found it.

The method of presenting the objects discovered is of no great moment as long as there is a method and everything described can be traced to its precise stratigraphic level and is assigned to its proper cultural setting. Everything illustrated must be described and must be easily traceable in the text. The labour involved in a comprehensive system of cross-referencing is one that should not be shirked, for nothing in a small way can be more infuriating than to search, perhaps for hours, for a reference to an object figured on some plate, only to discover that there is no mention of it anywhere in the report.

A complete catalogue of finds with columns recording this or that or more often blank, is of no great value. A great deal can be done by careful tabulation. Properly prepared tables should show at once the quantitative importance of any class of object. This last cannot be too strongly stressed; how often in the past have we not been given the impression that a particular object or pattern instanced is quite common at some site when in fact it is unique. Important grave groups should be fully illustrated, a far better method than any catalogue. In order to glance the distribution of major classes of cultural objects throughout a site, such things as microliths, copper axes and important pottery-types, the method employed by B. SUBBARAO in his report on excavations at Baroda seems to me an admirable one. Levels in various trenches can be equated and the whole results as regards the most important dating material seen at a glance. In this connection a word of warning is necessary. Where a chart or a section has a marginal notation bracketing certain levels into cultural periods and dating them, it is as well to defer their final production until these matters have reached their final form in the text. Sometimes discrepancies go uncorrected, the reason being that the author has boggled at re-drawing an elaborate diagram, which quandary would have been avoided if its construction had been left until the text was in its final form. More often than not the report is written round the diagrams and illustrations, it is better therefore that these should be in the rough copy stage until final decisions on all points have been reached.

A report must be adequately illustrated, but, with half-tone reproductions of photographs so expensive, care should be taken that general views of the site should be kept to a minimum, and members of the expedition, decorative or otherwise, should be photographed only to give scale to something more important. Only significant structural features need be illustrated and as many as possible. Say a corbelled arch, the characteristic stone or brick bonding and the paving slabs with a gutter, included in one figure. Photographs which purport to show soil changes in a section or change in method of superimposed wall construction must be particularly clear. In illustrating objects found, the more the better; no one to may knowledge has ever complained of excessive illustration. How useful it may be to have both photographs and line drawings of the same object is open to doubt, but where expense is some object, the author must decide which is the more appropriate for

the best presentation of the particular object. Whatever else is included or omitted, there must be the fullest possible line-drawing corpus of the pottery of the site, in divided section and profile as is now the standard method.

Connected with every dig there are always bound to be finds with untraced and untraceable provenance. When those who have dug with large gangs of workmen in the East tell me that they know the exact provenance of every object excavated, I can only shake my head in wonder at their credulity. Be this as it may, finds there will be whose true provenance is the miscellaneous basket; in addition interesting objects are bound to have emerged from the site from time to time as the result of manure earth digging or similar operations and are offered for sale to the excavators. Let such be recorded, for, even if they have no other value, they may be the only examples found and the recording of their presence is valuable from the point of view of geographical distribution.

In dealing with the objects found the question of technique is most important. The processes of manufacture, particularly of metal work and pottery, must be described, and all materials involved should be accounted for either as indigenous products or those of other regions introduced by trade. Unpublished material can be a positive bugbear, for it is not uncommon in archæological controversy for a writer to say—" In unpublished examples from Tell-i-Antikat (I trust there is no such site !) this feature is quite common." To verify this statement might mean visiting a number of museums, more often than not a quite impossible undertaking. But it is most disquieting to know that, where such a search is carried out, the statement is seldom upheld by the facts. Any object having individual features must be published by description and where possible by illustration.

We have now been told what the site contains and the particular stratigraphic horizon with which each object is associated, every one should by now be fully in the know, but, with the advantage of the personal experience of observing everything in all its aspects and dimensions at first-hand, it is the right if not the duty of the excavator to make the initial interpretation of what has been found. Personally I like to find the conclusions in their logical place which is at the end, not interpolated as a kind of Press hand-out for the indolent somewhere near the start. Though many may turn automatically to a chapter headed " Conclusions " or " Chronology " the majority will turn back to check the source of statements made in support of those conclusions. It is imperative therefore that this interpretation should refer to information that can be easily verified in the description of the site and its contents. Nothing strange or new must suddenly appear and all references to the excavation report must be clearly back-referenced. Such matters as chronology, the cultural and political history of the site and its identification with a known historical town can now be thrashed out and any such problems as out-of-context objects should be referred to here.

The main thing that the reader requires is information with no unexplained gaps. He likes to be able to find his way about a report without difficulty and get his information without having to do what the writer should have done for him. The answer is method, so that some information is not repeated and other omitted, location should be backed by adequate maps, excavation by clear plans and sections, the contents by table and charts ; illustrations should be adequate, lavish if possible, and the whole most carefully cross-referenced. Further, let no strange words descriptive of techniques, unknown possibly to all save the author, be presented without explanation to bewilder us, this being a most tiresome way of showing-off. After all if we read these reports for information, why must we do it the hard way ; let excavation reports be as clear and intelligible as possible so that we can get back to our good solid reading of science, fiction and mystery thrillers.

STUDIES IN EARLY AND MEDIÆVAL INDIAN CERAMICS—SOME GLASS AND GLASS-LIKE ARTEFACTS FROM BELLARY, KOLHAPUR, MASKI, NASIK AND MAHESHWAR.

By

B. B. LAL

[The Institute had collected from its excavations at Kolhapur (1945-46), Nasik (1950-51) and Maheshwar (1952-53) and explorations in Bellary and Hyderabad State several glass bangles, and glass or glass-like objects. Superficially it was difficult to distinguish between the two. It was also of primary importance to ascertain the characteristic properties of early and mediæval glass. Dr. B. B. LAL, Archæological Chemist, Government of India, Dehra Dun, kindly undertook to study these problems by undertaking their chemical and microscopic examination. This has shown that :—

(*i*) certain early glass-like objects, such as grooved discs, found usually with Buddhist objects, are neither made of glass, nor chalcedony but are made with a paste of the latter, and resemble in their composition objects of similar material from Mohenjo-daro.

(*ii*) the polychrome and monochrome glass bangles from Maski and Bellary, though associated superficially with microliths and neoliths, are technologically identical in their make and material (soda-lime glass, with addition of iron, cobalt etc., for the colours required) to the glass bangles of the 14th/15th century found from the stratified deposits at Kolhapur.

(*iii*) even early glass (from Nasik and Maheshwar), assignable to the 4th century B.C., on stratigraphic, numismatic and ceramic evidence, was also made with soda-lime silicates, and its colour due to iron-oxide.

(*iv*) The art of moulding and even annealing glass objects was known by 300 B.C. —H.D.S.]

Several stratified glass objects from archæological excavations conducted at Nasik by Dr. H. D. SANKALIA of Deccan College Post-Graduate and Research Institute, Poona, were received in this laboratory in 1952 for a scientific examination and study of their physical and chemical properties. In addition to these glass artefacts, nearly a dozen fragments of polychrome and monochrome glass bangles from Bellary, Kolhapur and Maski were also received for analysis and examination. These are datable to *Circa* 14 to 15th Century. All the glass specimens from Nasik have come from stratified excavations and are, therefore, datable by association with other relics of known date.

Although several analyses of glass specimens from a number of sites in northern India have been carried out in the past and the results published in the Annual Reports of the Archæological Survey of India, a complete scientific examination of both the physical and chemical properties of ancient or mediæval glass does not appear to have been undertaken so far. In fact, very few authentic glass specimens of known date and provenance have been scientifically examined in this country. These glass objects, are, therefore, of particular significance, as they furnish valuable material of known date and provenance for a scientific study of

the glass industry of those times. Scientific study of glass objects recovered from archæological excavations in the Far East, Middle East and Western countries has been carried out in the West, but such investigations have not been carried out on Indian material. It was, therefore considered desirable to carry out a systematic examination of these objects and study their physical and chemical properties.

Both microscopic and chemical methods have been employed for the study of these specimens. Physical properties such as hardness, specific gravity have also been determined in cases where the material was fresh and free from weathering. Leitz Universal Panphot Microscope was used for the microscopic examination of the specimens.

Glass bangles from Bellary

There are five fragments of polychrome bangles of opaque glass displaying very interesting designs and great manipulative skill in their fabrication. These specimens are illustrated in photo No. 1, pl. I. They are datable to *Circa* 14th to 15th Century. Four of these are genuine glass specimens, but the fifth specimen (uppermost in the figure showing triangular and rhombic design) is much softer and lighter than glass and appears to be composed of shellac or a similar resinous material. The four glass pieces show a hardness of from 5 to 6 and their specific gravity ranges between 2·42 and 2·50. These fragments show that the bangles have been moulded with meticulous care and their finish and workmanship are of a high order. The specimen shown in the centre of figure 1 is made of pale brownish yellow glass, the upper surface of which carries two parallel bands of liver-red glass with a twisted pattern done in lemon yellow and black glass in the middle. The liver-red colour has been found to be due to oxide of copper. The lemon-yellow colour has been produced by the oxide of iron. A cross-section of the piece was highly polished and examined microscopically under reflected light. The results are illustrated in photo-micro 2, pl. I. The photo-macro shows a number of holes in the body of the glass bangle. The two lighter patches at the upper two ends of the section represent liver-red glass bands on the two sides of the central twisted design. The two small light spots in the central part of the upper edge of the section represent the yellowish band which has been used along with the black glass to produce the twisted design.

The lower horizontal specimen in photo No. 1, pl. I is composed of deep cobalt blue glass with designs in lemon-yellow. It appears that after moulding the body part of the bangle, the pattern was produced by applying a lemon-yellow glaze to its surface. The deep-blue colour of the opaque glass of the body portion of the bangle is due to cobalt and the yellow colour of the bands has been produced by the oxide of iron. The bangle seems to have been moulded with great care. Photo-macro No. 3, pl. I shows the structure of the cross-section of this specimen in reflected

light. The lemon-yellow glaze bands are lighter than the cobalt blue glass of the body.

The specimen shown on the right side in photo No. 1, pl. I, in oblique position, is a nicely moulded fragment of polychrome bangle of opaque glass of pale greenish-yellow colour with interesting designs done in turquoise blue, black and white colours. The turquoise blue has been produced by the oxide of copper. The black colour is due to iron oxide, and the white colour has been found to be due to oxide of tin. The designs have been produced by fusing to the surface of the bangle glass bands of different colours carefully twisted to produce the desired patterns. In figure 4, pl. II is shown a photo-macro of a cross-section of the specimen in reflected light. There are several blow holes (dark spots) all over the cross-section. The variously coloured glasses used in producing the designs by fusing the bands to the body of the bangle are seen in section at the upper edge of the photo-macro. The pointed black patch jutting out of the oval section of the bangle represents black glass. The greyish white spot having a white fringe adjoining it is turquoise blue glass. At the upper edge it shows a white glaze. The black patch to the right of this is black glass.

The specimen on the left side in photo No. 1, pl. I, in the oblique position is again a fragment of a very carefully moulded bangle of cobalt blue opaque glass. The two bands (light in the photograph) on the two sides of the central design have been produced by applying a thick coating of a yellow glaze. The designs of dashes adjoining the bands at the edges in bluish white have been produced by applying a glaze. The circular spots in the central part of the surface of the bangle represent protruding beads of turquoise blue and yellow glass which were evidently fused to the surface after moulding the body of the bangle. The workmanship that went to produce this artistic specimen is undoubtedly of a very high order. The colours are iron oxide for yellow, copper for blue or turquoise blue and cobalt for deep-blue glass of the body of the bangle.

In figure 5, pl. II is illustrated the appearance of an oblique section of the specimen. This photo-macro shows the junction between the bead of yellow glass (light portion to the left) and the body of the bangle (cobalt blue glass, dark in shade). Several blow holes are clearly seen all over the cross-section. One white patch at the upper edge and two small white patches at the lower edge of the section represent the white dashes.

Glass bangles from Kolhapur[1]

There are four bangles from this site. They are datable to Circa 14th to 15th Century. All these are made of ordinary soda-lime glass but are differently coloured.

1. SANKALIA, H. D., "The Antiquity of Glass Bangles in India," *BDCRI*, Vol. VIII, pp. 252-59; and SANKALIA, H. D. and DIKSHIT, M. G., *The Excavations at Kolhapur*, (Poona 1952) pp. 115-120 and coloured plate XXXVI facing p. 116.

The hardness of these bangles ranges between 5 and 6 and the specific gravity between 2·42 and 2·50.

Specimen No. III-A 4, site MD, is a piece of polychrome bangle, which has been made by fixing on the surface of yellowish brown glass bangle thin pieces of green and liver-red glass. The red colour has been found to be due to the presence of copper compounds. A polished section of the bangle was examined under the microscope in reflected light and a photo-macro was prepared, as shown in figure 6, pl. III. There is a distinct line of demarcation between the upper green glass strip (light convex band) and the lower inner part of the bangle which is made of yellowish brown glass. The joint between the green strip (light convex band in the photo-macro) and the liver-red glass strip (dark portion of the right end of the convex band in the photo-macro) on the upper surface of the bangle is also very clearly seen in the photo-macro. The glass is opaque.

Specimen No. 1d, site No. MD II, is a piece of a green coloured glass bangle. The green colour is due to the presence of copper and iron oxides. The glass is opaque.

Specimen No. VI-A, site MD II, is a fragment of a bangle of transparent glass of fine light-blue colour. The colour is due to the presence of copper. The piece shows a very carefully moulded faceted design. The composition of this specimen, as determined by quantitative chemical analysis is as follows :—

SiO_2, 45·45 ; CuO, 1·81 ; Fe_2O_3, 2·14 ; Al_2O_3, 2·40 ; CaO, 9·09 ;

MgO, 3·37 ; Alkalies (by diff.) 35·74. Total = 100·00

The last specimen from Sq. II layer 3 is a fragment of black glass bangle. It contains an appreciable amount of iron which accounts for its black colour. Traces of cobalt are also present. The specimen is free from copper, boric oxide and manganese. It has been found to contain an appreciable quantity of phosphate.

Glass Bangles from Maski

There are three samples of polychrome glass bangle pieces from Maski. They are datable to *Circa* 14th to 15th Century. The variegated designs are seen clearly in the photograph (No. 7, pl. III).

The fragment of bangle on the right shows four colours. The rim is green in colour. The adjoining band is a combination of pale-yellow and reddish glass arranged as a twisted pattern. The third band is liver-red and the innermost band which is the broadest is composed of pale-yellow glass covered with a thick lemon-yellow glaze. The sample shows a remarkable workmanship in the execution of the designs. The glass used in the preparation of this polychrome bangle is opaque to translucent and the colours of the various bands have been found to be due to

the presence of copper and iron. The colour of green glass has been produced by the combined effect of oxides of iron and copper. The yellowish brown colour is attributable to iron oxide. The liver-red colour has been found to be due to oxide of copper. The lemon-yellow colour has been produced by the oxide of iron. A cross section of the bangle showing the variously coloured glass bands in juxtaposition was examined under the microscope in reflected light. The results have been photographically recorded as shown in fig. 8, pl. III. This photo-macro shows four distinct parts representing the four bands. The part at the left end of the photo-macro is green glass of the rim, and the part at the right end is pale-yellow glass having a layer of lemon-yellow glaze. The lemon-yellow glaze stands out as a distinct layer (light in the photo-macro) on the three edges of the band.

The specimen shown at the left in photo No. 7, pl. III is composed of pale-yellow opaque glass covered with a thin layer of lemon-yellow glaze. The yellow colour is due to the presence of oxide of iron. Figure 9, pl. IV, shows the cross-section of this specimen in reflected light. The lemon-yellow glaze is seen lighter in shade as a layer round the edge of the specimen. The glazed surface of the specimen was further examined by the ultropak for the study of the surface features of the glaze. Figure 10, pl. IV, shows clearly the spherulitics of the surface caused by incipient fusion of the glaze. The characteristic crackle or crazing which is a feature of most glazed surfaces is also visible in the lower part (light) of the photo-macro.

The central specimen in figure 7, pl. III, shows two colours, bottle-green and yellow. The bottle-green colour is due to the combined effect of iron and copper ; the yellow colour is attributable to the oxide of iron. The body of the bangle is made of bottle-green opaque glass and the designs have been produced by fusing to this body plain-strips of yellow glass as well as strips showing twisted patterns in yellow and green glass. A polished cross-section of this piece was examined under reflected light and the results are shown in figure 11, pl. IV. In this photo-micro, the white circular parts to the left and the upper part of the central portion of green glass of the body represent yellow glass. The dark part seen in the centre of the latter represents green glass which has been twisted with the yellow glass to produce the design seen very clearly in the central specimen in figure 7, pl. III. The glass used is opaque. Like the other specimen this specimen shows that the craftsmen who fabricated this bangle were adept in the art of handling glass and could manipulate molten glass with great skill. The designs have obviously been executed by sticking to the body of the bangle carefully prepared bands of glass of different colours.

Glass and glass-like objects from Nasik

No. 651 : *A round vermilion coloured object with a groove*

This object is made of glass of vermilion colour. In the photograph, fig. 12, pl. V, the conchoidal fracture of glass is very clearly seen. The glass is translucent

to opaque, but shows liver-red colour in reflected light. Chemical analysis shows that the colour of this object is due to copper oxide. (MG. S.N. (1) 2′ 8″).[2]

No. 692 : *Circular glass (?) object with grooved circle*

This object seems to have been originally composed of an opaque paste, but it has undergone some alteration due to prolonged burial in the soil. The object shows a network of cracks all over and the fabric has become weak and friable. Fragments of the specimen have been found to crumble to powder under a light pressure. The material has evidently lost part of its original hardness. (MG. S.N. (3) 5′ 6″).

The material of this specimen is dirty white and opaque and seems to represent a semi-vitreous or glassy paste. The conchoidal fracture which is a characteristic of glass is absent. The material is, therefore, not a true glass and can be described as a semi-vitreous paste. This is further confirmed by a quantiative chemical analysis which has shown a very high proportion of silica (above 80%) and a very small percentage of alkalies (2·41%). The results of this analysis are recorded in the table. These results show that the composition of the specimen is quite different from that of ordinary soda or potash glass. The material is highly siliceous and contains a very small proportion of alkalies and lime. Taken together, the acidic oxides amount to 86·52% of the material. Combined water accounts for 6·23% ; the alkalies, lime and magnesia amount to 7·25%. The presence of a high proportion of combined water in this object is an evidence of alteration of the material and the hydration of oxides.

This object is, therefore, quite distinct from specimens Nos. 640, 669 and 5042, which are true glasses composed of soda-lime silicates. Its chemical composition is very similar to that of some vitreous pastes found at Mohenjodaro. The chemical composition of three such pastes unearthed at Mohenjodaro is recorded in the table for comparison. It will be observed from these analyses that the proportion of combined water is much higher in the present specimen than in Mohenjodaro pastes referred to above. This high water content is not unexpected in view of the alteration undergone by the specimen during the long course of its burial in the soil.

A microscopic slide was prepared out of this friable material for petrological examination. The results are illustrated in figures 13, 14, pl. V, wherein the photo-macro No. 15 shows a clearly defined banded structure. Ordinary sound glass does not show any structure under the microscope, and it is completely isotropic under crossed nicols. The substance under examination was, however, found to be

2. These abbreviations stand for the name of the mound, *viz.*, Matichi Gadhi, the trench and Nasik, then the layer and depth. Layers 5 and 4 belong to the Early Historical Period (C. 300 B.C.-100 A.D.) and the layers 3-1 to mixed deposits of a later period (C. 1200-1800 A.D.) H.D.S.

anisotropic showing the presence of chalcedony-like material along with some glassy matter. Photo-macro No. 16 shows the structure under crossed nicols. The spherulitic crosses of true chalcedony are, however, not seen. It appears that crushed chalcedonic silica was used for the preparation of this material. Opaline silica may also have been used along with chalcedony.

Fragments taken out of this object have been found to display, particularly on freshly broken surfaces, a remarkable iridescence characteristic of disintegrated and decayed glass. This iridescence is due in the present case to the lenticular flakes of silica deposited as a result of weathering.

No. 5026 : *Disintegrated glass* (?)

This sample, (MG.N. D(5) 17′) consists of fragments of a highly decayed material which shows an iridescence characteristic of decayed glass. The fabric of the material has undergone considerable alteration and it has lost much of its original coherence and hardness. The material is very friable now and perfectly opaque. From its general condition, it appears that this material was probably a semi-vitreous paste having considerable hardness and a high silica content. The percentage of silica as determined by quantitative chemical analysis is 87·55 ; the results of the analysis are recorded in the table.

Two small fragments taken from this specimen were used for the preparation of thin sections for petrological examination. The results of this examination are shown in figure 15 and 16, pl. VI. The two photo-macros show a banded structure. The typical aggregate structure of chalcedony and spherulitic crosses under crossed nicols are not noticeable in these photo-macros. Another fragment from this specimen was also examined in thin section under the microscopic and characteristic aggregate structure and spherulitic crosses typical of chalcedony were clearly seen. These results are shown in photo-macros 17 and 18, pl. VII.

This specimen shows a marked iridescence so characteristic of decayed Roman glass, but the petrological examination has demonstrated that this material is anisotropic, unlike true glass. Chemical composition of this specimen also agrees very closely with that of Mohenjodaro paste (e.g. table). From the results it is concluded that this specimen is not a true glass, but it represents a decayed glassy paste containing a very high proportion of silica and very little alkalies. This material is similar to specimen No. 692 already described.

No. 640 : *A piece of glass*

This specimen is a thin piece of bottle-green transparent glass with a hardness of 6 to 7. Its specific gravity is 2·684. The colour is due to oxide of iron. The specimen is remarkably fresh and free from any weathering or decomposition. (MG. N. D. (4), 11′ 11″).

No. 669 : *Glass*

It is a splinter of bottle-green glass with a specific gravity of 2·352 and hardness ranging between 6 and 7. Its colour is due to the oxide of iron.

The sample represents an ordinary glass composed of soda-lime silicates. Microscopic examination of this specimen does not reveal any structure, but the material is perfectly isotropic under crossed nicols. (MG. N. A(5), 18′ 5″.).

No. 5042 : *Two pieces of glass*

These are two pieces of thick bottle-green glass in a good state of preservation. Their hardness ranges from 5 to 6 and the specific gravity is 2·593. The glass is fresh and free from decomposition. The colour is due to iron oxide. A quantitative chemical analysis of the sample gave the following percentage composition :—

SiO_2, 65·28 ; Fe_2O_3. 4·78 ; Al_2O_3, 5·75 ; MnO, 1·73 ; CaO, 11·88 ;

MgO, 1·48 ; Na_2O, 7·88 ; $K_2$1·06 ; H_2O + 0·18 ; Total, 100·02.

These results show that this sample is composed of soda-lime silicates. It, therefore, represents an ordinary soda-lime glass. The proportion of lime is, however, very high, as the quantity generally employed in ordinary soda-lime glasses is 4 to 5% (MG. N. F(5) 13′ 10″).

No. 5037 : *Disintegrated glass* (?)

This material (MG. N. D(5). 17′ 4″) is similar to specimen No. 5026 already described. It is a highly weathered opaque material, but originally it must have been coherent and hard. The friable and powdery condition of the specimen is due to its weathering and decay. The specimen shows a marked irridescence typical of decayed Roman glass. This effect is evidently attributable to the deposition of minute flakes of silica as a result of weathering. This material has been chemically analysed and the results of analysis are recorded in the table. These results show that the material is highly siliceous. Silica accounts for 85·5% of the material and alkalies are present only to the extent of 8·03%. In chemical composition, therefore, this material shows a marked similarity to Mohenjodaro pastes (e.g. table).

Fragments of this specimen were used for the preparation of two microsopic slides for the determination of the structure of the specimen. Figures 19 and 20, pl. VIII show two photo-macros. Photo-macro No. 19 shows a very clearly defined banded structure. Photo-macro No. 20 shows an aggregate structure similar to that of chalcedony. This material is, therefore, not a true glass. It shows a banded aggregate structure and an anisotropic behaviour. True glass does not

show such a structure under the microscope and is perfectly isotropic. The anisotropic nature of the specimen under examination is evidently due to the presence of chalcedonic silica.

No. 550 : *Glass worked*

This sample (MG. N. B(5). 16′ 3″) is only superficially weathered but has a sound and fresh core. On examination, it has been found to be composed of ordinary soda-lime glass. The black colour of the glass has been completely obscured by a layer of silica which has got deposited on the surface as a result of weathering. This specimen was examined under the microscope and was found to be completely isotropic. Its specific gravity is 2·518 and hardness about 5. The sample has been analysed quantitatively, and the results are recorded below :—

SiO_2, 55·55 ; Fe_2O_3, 3·06 ; Al_2O_3, 9·89 ; Mn, tr. ; CaO, 5·59 ;

MgO, 2·93 ; Na_2O, 6·26 ; K_2O, 16·12 ; H_2O, 0·56 ; Total 99·96.

No. 461 : *A piece of white glass*

This specimen is not a glass. It has got a hardness of 3 which is much lower than the hardness of ordinary glass. Moreover, its specific gravity is 2·703 which is much higher than the specific gravity of glass. The specimen is easily attacked by dilute hydrochloric acid. It has been found to be a crystal of calcite.

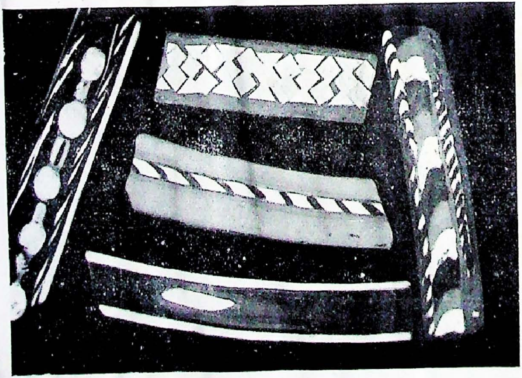
No. 821 : *A piece of disintegrated glass* (?)

This sample (MG.N. D(3). 6′ 9″) is highly weathered and is in a very weak and friable state. It is opaque and white and is characterised by a marked iridescence so typical of decayed glass. Chemical analysis has shown that silica is present to the extent of 80·99%. A microscopic slide prepared from a fragment of the specimen shows a banded structure. True glass does not show any structure and is perfectly isotropic. The specimen under examination is, however, distinctly anisotropic and possesses an aggregate structure. Figure Nos. 21 and 22, show the structure in ordinary light and under crossed nicols respectively. Both of these show the presence of chalcedony and its spherulitic crosses and aggregate structure are very clear.

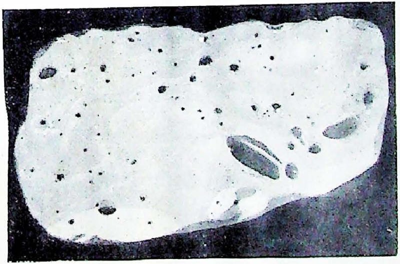
From the above results it is clear that this material was fabricated by heating chalcedonic silica powder with a very small proportion of alkali oxides which being easily fusible served as a flux for binding the siliceous grains. It is probable that [illegible] opaline silica and chalcedony were used as the raw material for the fabrication of this specimen.

[illegible] as a semi-glassy paste, as it is similar to speci- [illegible] already described.

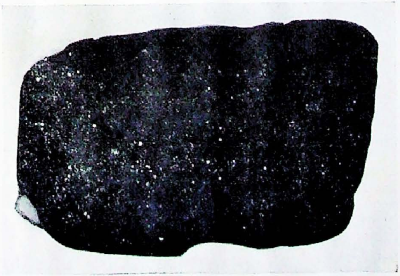
PLATE I



No. 1. Polychrome glass bangles from Bellary showing variegated designs—X $1\frac{1}{2}$.



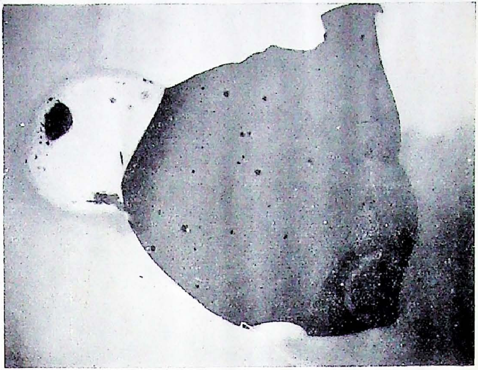
No. 2. Cross section of a bangle in reflected light—X8.



No. 3. Cross section of a bangle in reflected light—X7.

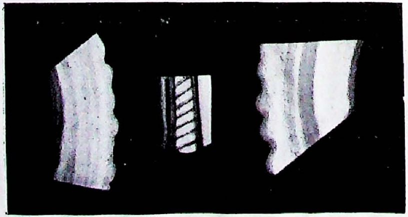
PLATE II

No. 4. Cross section of a bangle from Maski in reflected light—X7.

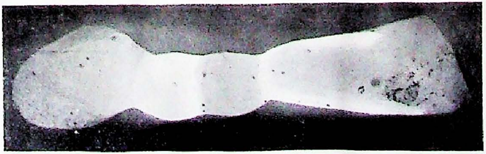


No. 5. Oblique section of a bangle in reflected light—X7.

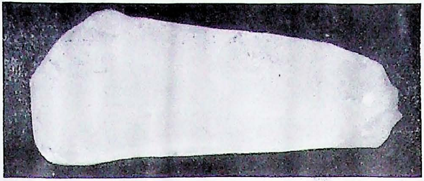
No. 6. Cross section of a bangle from Kolhapur in reflected light—X8.



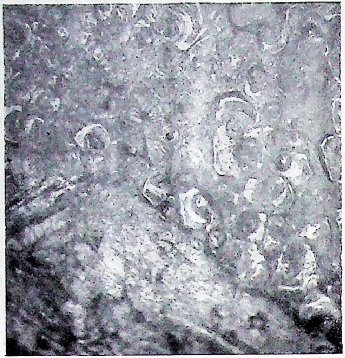
No. 7. Polychrome glass bangles from Maski showing various designs—X1½.



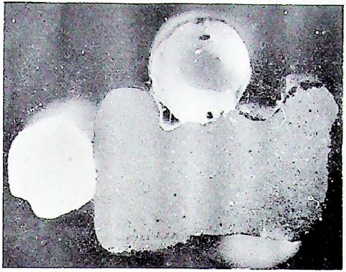
No. 8. Cross section of a bangle in reflected light—X6.



No. 9. Cross section of a bangle in reflected light—X8.

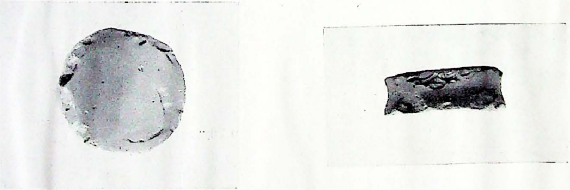


No. 10. Surface of glazed bangle as seen by the Ultropak showing fusion and crackle of glaze—X30.

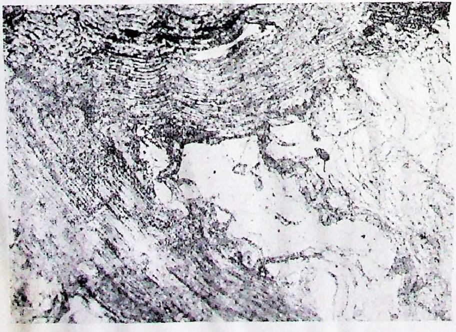


No. 11. Cross section of a bangle in reflected light—X9.

PLATE V

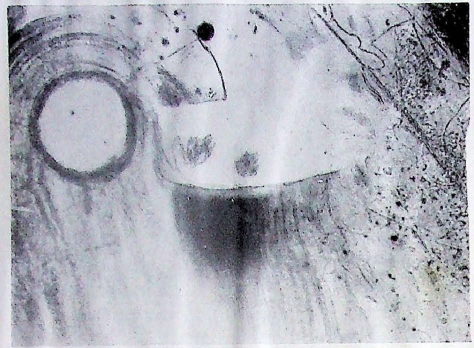


No. 12. Vermilion coloured object with a groove. The conchoidal fracture is very clear—X1.

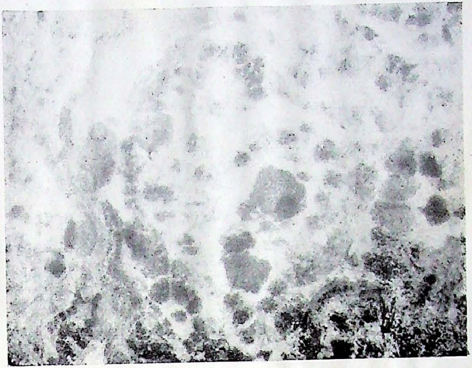


No. 13. Photomacro of weathered specimen (No. 692 from Nasik) showing a banded structure in ordinary light—X60.

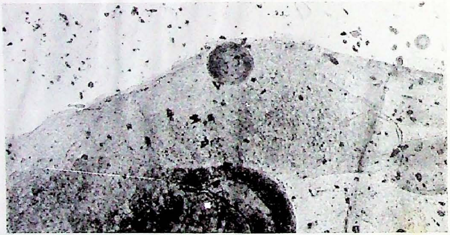
No. 14. The same as No. 13 under crossed nicols showing anisotropic nature of the sample—X60.



No. 15. Photomacro of a disintegrated paste (No. 5026) showing a banded structure—X60.



No. 16. Photomacro of another fragment from No. 5206 showing a banded structure—X20.

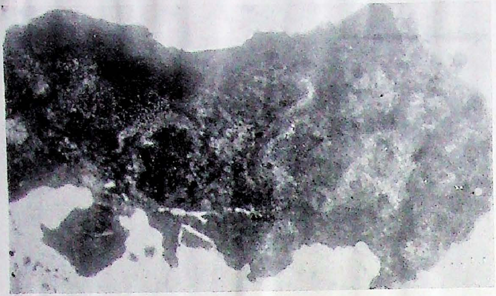


No. 17. Photomacro of another fragment from No. 5026 showing an aggregate structure—X60.

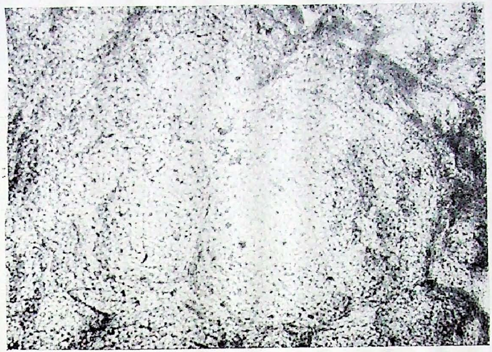
No. 18. The same as No. 17 under crossed nicols, showing **spherulitic** cross and aggregate structure typical of chalcedony—X60.

No. 19. Photomacro of weathered paste No. 5037 showing a banded structure—X60.

Plate VIII

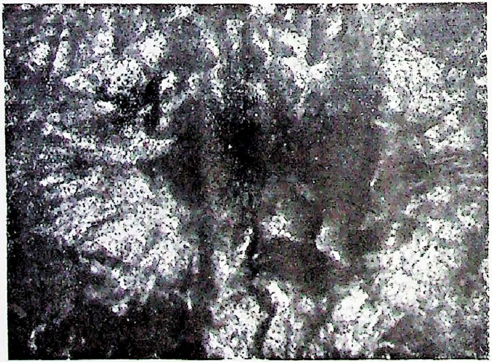


No. 20. Photomacro of weathered paste No. 5037 showing aggregate structure—X60.



No. 21. Photomacro of a weathered paste specimen (No. 821)—X60.

PLATE IX



No. 22. The same as No. 21 under crossed nicols showing aggregate structure and spherulitic cross typical of chalcedony—X60.

1

No. 23. GLASS TABLET from Maheshwar showing an elephant design in relief.

No. 175 : *Sample of glass or crystal*

The sample (MG. N. A(4). 11′ 3″) has been reduced to powder on account of weathering. On chemical analysis it has been found to contain about 94·74% of silica. It approaches the hardness of quartz and appears to be made of quartz.

No. 255 : *A piece of glass*

This (MG. N. B(4). 11′ 9″) is a sample of weathered glass. On account of decay it falls to pieces even on a slight pressure. The specimen shows a network of cracks all over, but partially retains its transparency. Light greenish blue in colour, it shows a hardness of 4 to 5 and specific gravity of 2·196.

No. 256 : *A piece of crystal*

This (MG. N. F(4). 10′ 3″, sample shows a specific gravity of 2·68 and hardness of 7. It is quartz.

No. 282 : *Glass piece* (?)

It (MG. N. E(3). 5′ 4″), is similar to specimen No. 821.

TABLE OF ANALYSIS

Contents		Circular object No. 692 Nasik	Dis-integrated glass (?) No. 5026 (Nasik)	Dis-integrated glass (?) No. 5037 (Nasik)	Paste from Mohenjo-daro HR* 3572	Paste from Mohenjo-daro*	Paste from Mohenjo-daro VS. 195
SiO_2	...	80.17	87.55	85.58	85.90	88.12	84.66
Fe_2O_3	...	2.00	1.49	1.96 }	6.74	{ 1.82 }	6.81
Al_2O_3	...	4.35	3.17	3.61 }		{ 3.20 }	
TiO_2	...	tr	—	—	—	—	—
MnO	...	—	—	—	—	—	—
CuO	...	—	—	—	0.46	0.46	0.97
CaO	...	2.72	1.44	1.66	1.73	1.26	1.40
MgO	...	2.12	0.53	0.41	0.38	—	tr.
Na_2O	...	By diff. }	By diff. }	By diff. }	3.70	5.04	5.46
K_2O	...	2.41 }	2.58 }	3.03 }			
H_2O	...	6.23	3.24	3.75	1.49	—	[illegible]
Total	...	100.00	100.00	100.00	100.00	100.00	100.00

Glass Tablet from Maheshwar: This tablet showing an elephant design in relief (*Cf.* Photograph[3]) is composed of dark, amber-coloured soda glass. The glass is translucent to opaque. The tablet is slightly weathered and shows a network of cracks on the surface. A whitish deposit of silica is also noticeable

* See MARSHALL, *Mohenjodaro and the Indus Civilisation*, Vol. II, pp. 574-575.

3. See No. 23, Plate IX.

(36)	Santoṣa	9
(37)	Tṛṣṇā	12
(38)	Lobha	4
(39)	Yācaka	32
(40)	Dāridryaṁ	18
(41)	Dhana	17
(42)	Dānaprastāva	7
(43)	Dānadaridraprastāva	4
(44)	Sadarthin	5
(45)	Asadarthin	5
(46)	Yācakabhīta	3
(47)	Dānopadeśa	3
(48)	Dhanavyaya	1
(49)	Lakṣmīprāptihetu-prastāva	5
(50)	Alakṣmīhetu	4
(51)	Lakṣmīmohita	12
(52)	Svargāgatacinha	1
(53)	Narakāgata	3
(54)	Paropakāra	11
(55)	Dharma	5
(56)	Lalāṭalikhita	3
(57)	Vināśasamaya	2
(58)	Satya	5
(59)	Asatya	3
(60)	Puṇyahāni	2
(61)	Śūdrapātahetu	4
(62)	Prāktanakarma	3
(63)	Karmasākṣin	1
(64)	Bhāgya	4
(65)	Laukikakuśala	13
(66)	Gopya	2
(67)	Apratyākhyeya	3
(68)	Vāsasthāna	9
(69)	Guṇabhūṣaṇa	3
(70)	Bhūbhūṣaṇa	2
(71)	Kṛpā	1
(72)	Uttamāśrayā	6
(73)	Guṇavajjanaya	3
(74)	Vaśīkaraṇa	2
(75)	Svabhāva	1
(76)	Avasarānavasara	3
(77)	Jyeṣṭha	3
(78)	Bandhu	3
(79)	Namaskāra	3
(80)	Gamana	2
(81)	Śakuna	2
(82)	Apaśakuna	3
(83)	Pradhāna	1
(84)	Duḥkhanāśa	4
(85)	Paricayadoṣa	2
(86)	Apamānahetu	5
(87)	Kṣudhā	3
(88)	Bhojana	2
(89)	Atithi	8
(90)	Viśvāsa	8
(91)	?	5
(92)	Mitraparīkṣā	3
(93)	Kumitra	4
(94)	Maitrībhaṅgahetu	2
(95)	Viṣatulya	1
(96)	Jarātulya	1
(97)	Piśunopadeṣṭā	1
(98)	Duḥkhatulya	1
(99)	Hṛdayaśalya	1
(100)	Veṣa	2
(101)	Vairahetu	1
(102)	Paśutulya	2
(103)	Durbodhya	3
(104)	Nīcopadeśa	3
(105)	Nirarthaka	1
(106)	Cintā	6
(107)	Abodhya	1
(108)	Bodhya	1
(109)	Apūrṇa	2
(110)	Gṛhavāsanīya	1
(111)	Mṛtyu	8
(112)	Śīta	3
(113)	Gṛhastha	4
(114)	Geha	4
(115)	Strīprastāva	12
(116)	Asatī	11
(117)	Putra	10
(118)	Kuputra	5
(119)	Putramātṛ	3

(120)	Ekodarotpannavailakṣaṇya	4
(121)	Kupuruṣastrī	1
(122)	Putrī	1
(123)	Vara	2
(124)	Śvaśrū	1
(125)	Gṛhasthottama	3
(126)	Dayā	19
(127)	Rājanīti	24
(128)	Nīti	61
(129)	Gajalakṣaṇa	5
(130)	Madagajalakṣaṇa	6
(131)	Aśvalakṣaṇa	31
(132)	Aśvāroharakṣaṇa	9
(133)	Vayojñāna	10
(134)	Dhanurlakṣaṇa	6
(135)	Śaralakṣaṇa	11
(136)	Śastravāraṇavidhi	10
(137)	Vidhirupavāsa	1
(138)	Akṣauhiṇīsaṁkhyā	4
(139)	Śūrapraśaṁsā	11
(140)	Senāpati	1
(141)	Amātyaprastāva	1
(142)	Mantrin	1
(143)	Sahāya	7
(144)	Purohitādi	4
(145)	Rājasatya	4
(146)	Rājasevā	12
(147)	Sevaka	4
(148)	Sevakanindā	13
(149)	Amātyaprādhānyadoṣa	5
(150)	Svāmin	6
(151)	Adhikārilakṣaṇa	9
(152)	Hitopadeṣṭā	5
(153)	Daṇḍanīti	6
(154)	Mitraparīkṣā	2
(155)	Rājamaitrī	1
(156)	Rājadarśana	1
(157)	Rājalakṣaṇa	5
(158)	Aniyamya	3
(159)	Rājasevāphala	1
(160)	Yaśa	3
(161)	Rājasevāphala	4
	Total	1,195

Many of the verses from this work can be traced in other printed anthologies like *Śārṅgadharapaddhati*, *Sūktimuktāvalī*, *Subhāṣitaratnabhāṇḍāgāram* and *Subhāṣitāvalī*. Yet there are good many verses which cannot be found in them. This can be exemplified by studying in detail *Khaladurjananindā* of the present work.

	Ś[2]	S	Su	Sū
induṁ nindati taskaraḥ	—	+[3]	—	—
karṇāmṛtaṁ sūktirasaṁ	+	—	—	+
karpūradhūliracitā	—	—	—	—
khalaḥ satkriyamāṇo'pi	+	+	—	—
khalaḥ sarṣapamātrāṇi	—	+	—	—
khalānāṁ kaṇṭakānāṁ	—	+	+	—
khalo mṛgayate	—	—	—	—
jāḍyaṁ hrīmati	—	+	+	+
dahyamānās tu tīkṣṇena	+	+	+	—
durjanenocyamānāni	—	+	+	—

2. Ś = *Śārṅgadharapaddhati*, S = *Subhāṣitaratnabhāṇḍāgāra*, Su = *Subhāṣitāvalī*, Sū = *Sūktimuktāvalī*. + indicates that the verse is found in the work and — indicates that it is not found.

3. Included in *Sāmānyanīti*.

durvṛttasaṁgati	—	+ [4]	—	—
doṣam eva samādatte	—	—	—	—
na vinā paravādena	+	+	+	—
pariśuddhām api vṛttim	+	+	+	—
pātram apātrīkurute	+	+ [5]	+	—
pādāhato'pi dṛḍha	+	+	+	—
piśunatvam eva vidyā	—	+	—	—
mārjāro na labheta	—	—	—	—
mṛgamīnasajjanānām	—	+	+	—
labdhocchrāyo nīcaḥ	+	+	+	—
varjanīyo matimatā	+	+	+	—
viṣadharato'py ati	—	+	+	+
saṁgame dahati	—	—	—	—
sumukho'pi suvṛtto'pi	+	+ [6]	—	—
svārthaṁ vināpi	—	—	—	—

The present work is important also from the point of view of its giving different versions of the verses, *e.g.* :

(1) jāḍyaṁ hrīmati gaṇyate *vratarucau*[1] dambhaḥ śucau kaitavaṁ, śūre nirghṛṇatā *ṛjau*[2] vimatitā dainyaṁ priyālāpini / tejasviny avaliptatā mukharatā vaktaryaśaktiḥ sthire, tat ko nāma guṇo bhavet sa *guṇināṁ*[3] yo durjanair nāṅkitaḥ //

(1. Sū. *dhṛtarucau* for *vratarucau*. 2. S. Sū. *munau* for *ṛjau*. 3. Su. *guṇavatāṁ*, Sū *sa viduṣāṁ* for *sa guṇināṁ*).

(2) dahyamānās tu *tīkṣṇena*[1] nīcāḥ parayaśogninā / aśaktās tat padaṁ gantuṁ tato nindāṁ *prakurvate*[2] //

(1. Ś. S. *sutīvreṇa*, Su. *sutīkṣṇena* for *tu tīkṣṇena*. 2. Su. *pracakrire* for *prakurvate*).

(3) na vinā paravādena ramate durjano janaḥ / *kākaḥ*[1] sarvarasān *bhuṅkte*[2] vināmedhyaṁ na tṛpyati //

(1. Su. *śvā hi*. 2. Ś. S. Su. *bhuktvā* for *bhuṅkte*).

(4) pātram apātrīkurute dahati *guṇaṁ*[1] sneham āśu nāśayati / amale malaṁ *niyacchati*[2] dīpajvāleva khalamaitrī //

(1. Su. *guṇān* for *guṇam*. 2. Ś. Su. *prayacchati* for *niyacchati*).

4. Given under *asatsaṁgatinindā*.
5. *Ibid*.
6. Given under *Saṁkīrṇānyokti-kaṇṭaka*.

(5) pādāhato'*pi*[1] dṛḍhadaṇḍa*samāhato'pi*[2] yaṁ daṁṣṭrayā *spṛśati*[3] taṁ kila hanti sarpaḥ / *harṣād ivaiṣa piśuno'tra manuṣyadharmā*[4] karṇe *paraṁ* spṛśati hanty aparaṁ[5] samūlam //

(1. Su. *atha* for *api*. 2. Su. °*vighaṭṭito vā* for °*samāhato'pi*. 3. Su. *daśati* for *spṛśati*. 4. Su reads the line as *ko'py anya eva piśuno'dya bhujaṅgadharmā*. 5. S. *paraṁ* for *aparaṁ*).

The foregoing discussion naturally leads us to another problem *viz.* the desirability of undertaking a critical edition of all the *Subhāṣitas* in view of the fact that the compilers of these works had their own versions of the text, which is used by them in their works. These anthologies will help also the Editors of individual works from which the verses are extracted by the compiler for his work.

No information about the compiler of the present anthology can be obtained from the manuscript. It gives only the name of the scribe.[7] Under these circumstances it is very difficult to fix the exact date of the compilation. All the same we can give the probable date of the work which lies between the date of copying the Ms. and the date of one of the authors mentioned by him in his work. The Ms. is dated as Saṁvat 1657 (= A.D. 1600) and the compiler has mentioned ŚĀRṄGADHARA, among a very few authors mentioned by him. The date of ŚĀRṄGADHARA has been fixed as 1363 A.D. Therefore the date of compilation of the present anthology falls between 1400 A.D. and 1600 A.D.

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IDENTIFICATION OF CHARRED RĀGI AND RICE GRAINS FROM THE EXCAVATIONS AT KOLHAPUR 1945-46

By

L. S. S. KUMAR

[This report on the identification of charred grains—*rāgi* Finger Millet (E. *coracana*) and rice—found from the excavations at Kolhapur should have normally been printed along with the report on the excavations, which was published in 1952. But somehow in the long delay that took place between the sending of the report to the press, and its final printing, the Press lost this and some other material. Since the subject is important from the food economy and habits of the people, as well as from the point of view of the antiquity of the various species of grains now grown in each region in India, it is deemed desirable to publish Dr. KUMAR's report, though late.

The *Rāgi* grains, besides a few grains of gram, (Cicer *Linn*) were found from the layers ascribed to the Bahmani period, (Layer 4), *circa* 14th to 15th century ; those of rice from the Sātavāhana, *circa* 1st century A.D. The latter also yielded a few seeds of tamarind (Tamarindus indica) and Hirdā (Terminalia catappa). It is indeed interesting to note that both the *rāgi* and rice grains closely resemble the types grown today—H. D. SANKALIA].

Office of the Economic Botanist to Government, Bombay Province, Poona.

D.O. No. E.B./1092 of 1948,
College of Agriculture, Poona 5.
Dated, 29th April, 1948.

Dear Dr. SANKALIA,

With reference to the specimens of charred rice, *ragi* and gram sent with your letter dated 30th January 1948, I have to report as follows :—

Charred Rice (Samples I, II and III)—The grains in all the three samples are completely carbonised. They have turned black both on the surface as well as inside and have the appearance of charred material. The grains are without husk. Probably the husk has not charred and disintegrated. The form and outline of the grain is very well preserved and many of them still possess their typical shape. On being moistened with water, black particles get detached. It was also not possible to take sections of the grains for observing the presence of cells as the blade got covered with black powder.

The length and breadth of 100 grains from each sample was measured and the average figures obtained are tabulated below :

Sample No.	Length of grain in mms.	Breadth of grain in mms.
I.	4.8	2.6
II.	5.4	2.3
III.	3.8	2.3

In order to compare these grains with those grown in the Bombay Province today, the above measurements may be compared with the enclosed list which gives the length and breadth of grains of different varieties. It appears that samples I and III have a smaller length but all three are about as broad as the varieties grown today.

Charred Ragi (Samples No. IVa and IVb)—The grains in both the samples are completely carbonised. The surface is quite smooth as in fresh normal grains and the shape is well preserved. The grains bear a close resemblance to *ragi* grown today.

Charred Grain (Sample No. V)—The grains in this sample are completely carbonised but are very well preserved. They have retained their shape exceedingly well and resemble the grain varieties grown today to a remarkable extent except for the fact that they appear much smaller in size.

Charred Bamboo (Samples No. VI and VII)—These samples may please be referred to the Silviculturist to the Government of Bombay, Central Buildings, Poona, who is more competent to express an opinion on these samples than the undersigned.

The samples are returned herewith.

Yours sincerely,
Sd/- L. S. S. KUMAR

To

The Economic Botanist to Government,
Bombay Province, Poona 5.

No. 41,2538 of 1948. *Poona* 5, 18*th March*, 1948.

Subject :—Mean length and breadth of rice grains.

Reference :—Your No. E.B./602 dated 3-3-48.

I have the honour to give below the rice (without husk) length and breadth of different varieties.

Name of the Sample	Rice		Remarks	
	Length mm.	Breadth mm.		
Kolamba 184	5.79	2.00	Early	Karjat Rices.
Kolamba 540	5.55	1.90	Mid-late	
Kolamba 42	5.40	1.99	Late	
Zinya 149	5.42	1.82	Late	
Patni 6	5.70	2.50	Early	Ratnagiri Rices
Kudai 25	5.70	2.60	Early	
Panwel 61	6.10	2.40	Mid-late	
Bhadas 79	5.40	2.80	Mid-late	
Waksal 207	6.10	2.50	Late	
Varangal 487	6.10	2.10	Late	
Mugad 161	7.70	2.70	Late	Mugad Rices
Mugad 81	7.90	2.60	Late	
Mugad 249	7.20	2.50	Late	
Antersal 67	6.20	2.70	Late	
Antersal 90	7.30	2.70	Late	
Antersal 200	6.70	2.50	Late	
Jaddu 1061	6.00	2.80	Mid-late	Kumta Rices
Muskety 1315	6.50	2.60	Mid-late	
Halga 244	5.70	2.40	Late	

Sd/ - x x x
For Deputy Director of Agriculture,
(C.R.), B.P., Poona 5.

REVIEWS

The Classical Age, Bharatiya Vidya Bhavan's History and Culture of the Indian people, Vol. III, Foreword by K. M. MUNSHI, General Editor R. C. MAJUMDAR, Assistant Editor A. D. PUSALKAR, pp. 1-745 with Index, General and Special Bibliographies, 43 plates and 4 Maps.

This is the third of the series of Indian History planned by the Bharatiya Vidya Bhavan. It covers the period between A.D. 320 to 740 A.D., practically the same span of time that was covered by the *Vākāṭaka-Gupta Age*, edited by Dr. R. C. MAJUMDAR and Dr. A. S. ALTEKAR. Whereas the latter is in a smaller type and size, not so profusely illustrated, and the work of seven scholars, eighteen scholars have cooperated in the former. The only common contributors to both the works are Dr. R. C. MAJUMDAR, Dr. D. C. SIRCAR and Professor K. A. Nilakanta SASTRI.

The main historical portion, *viz.* that relating to the Guptas is from the pen of Dr. MAJUMDAR. Naturally this hardly differs in language, presentation or in the discovery of new facts from his chapter in the Vākāṭaka-Gupta Age. In fact, if one examines *from this point of view* these so called " National histories " *one indeed fails to find anything new, as far as purely historical facts are concerned,* that was not known in 1924, 1933, 1941, 1943, when SMITH, BANERJI, DANDEKAR and SALETORE respectively wrote on this period. The origin of the Guptas, details about the life of Chandragupta I, as well as the order of succession even within the main line, full identification of the kings and countries conquered by Samudragupta are not yet securely ascertained. During the last thirty years a number of interpretations were offered. Some of these are accepted, and the rest rejected as fanciful. Poor Vākāṭakas whom Jayaswal brought forth from oblivion and whom ALTEKAR and even MAJUMDAR, for the sake of convenience, bracketed with the Guptas by calling the period between 200 A.D. to 600 A.D., after them, have been shown their proper place by MAJUMDAR who now considers them nothing better than petty provincial rulers.

All this is due to the fact that real research has lagged behind, and indeed little new evidence has come forth during the last three decades, since SMITH's latest edition was published. The Rajaghat seals and terracottas which so much enlighten us regarding the fashions of the period in U.P. were a chance discovery. The beautiful sculptures from Sarnath, the terracotta plaques from Paharpur and the paintings from Bagh and Ajanta, as well as the social, economic and religious conditions of the period were familiar to the specialists and students of the subject.

However, these new histories—the smaller, handier and cheaper volume by the Bharatiya Parishad, as well as the present, though bulky and beyond the means of ordinary students and even libraries—make it available to the teacher at one place, all that is known of the Gupta period, in its widest connotation. In this lies the chief value of these histories. It is further heightened by the inclusion of General and Special Bibliographies and a chronological table in the *Classical Age*. A College student or an intelligent layman would still wish that instead of his trying to purchase both the books, or drink the same wine but bottled by different firms, efforts would be made to produce one work. That way lies true unity. A specialist would like to see a conscious, organized attempt to obtain more concrete evidence for the Gupta history proper, as well as for the sub-periods and regions. Of this "golden" age we indeed know nothing about the town planning, houses, and everyday life of the people, their dress, vessels and ornaments, as we known of the Harappan (the people of the Indus valley). A number of Gupta sites are scattered over the U.P., of the Vākāṭakas in M.P., and the Chālukyas in Karnatak. Horizontal excavations at the most important of these sites would give a much more accurate and detailed picture of India between the 4th to 7th centures A.D., than any attempt at writing a "national" history. For a true history lives and grows on facts and not on "points of view."

Coming to details, it should be pointed out that the Maitraka inscriptions mention only one *peṭha*, and one *bhukti*, both territorial units, but several *sthalis*, *āhāras* and *pathakas*. So the statement of Dr. GHOSAL (who contributes the section on administration) that a regular organisation of provincial administration under the Maitrakas is suggested by the location of the donated lands in the specified *peṭhas* (or *sthalis*) comprised in *Viṣayas* (or *āharaṇis*, or *prāveśyas*), which were themselves included in the *bhukti*, needs correction.

Proper use of the published material[1] would have saved the writer from committing this error. Not only the Maitraka administration was regularly organized but it refers to several new smaller administrative units, a fact which might be regarded as the Maitraka contribution to the evolution of administrative system.

Likewise Shri S. K. SARASWATI who contributes the chapter on Architecture makes no reference to the temple at Gop, and to the temple of Varāha which has also a niched figure of Gaṅgā at Kadvar in Saurashtra.[2] Stylistically and iconographically these are the only temples from the Western part of the Gupta empire known to belong to this period. The temple at Gop is also important from the archæological point of view.[3]

1. For instance the section on administration in H. D. SANKALIA'S *Archœology of Gujarat*, pp. 199-200.
2. See SANKALIA, *op. cit.*, p. 55, p. 61 and p. 63.
3. *Ibid.*

Beautiful sculptures of Gupta style have also been discovered in North Gujarat and in the former Idar State, since the writer publised his work. Of these the two figures of a mother and child from the temple of Koṭyārka,[4] Vijapur district, are cut in the round, and show that inner poise besides anatomical grace, characteristic of the sculpture of this period, but Dr. Ray seems to be unaware of these. Existence of such sculptures in Gujarat shows that this region had also come under the influence of the school of Saranath. At present we know so little of it, as *very little work has been done in this area.*

H. D. SANKALIA

The Bibliography of Madhya Bharat Archaeology, Part I. By H. V. TRIVEDI, Assistant Director of Archæology, Madhya Bharat, and Curator, Museum, Indore, 1953, pp. 8-53, and one map.

In this work Dr. TRIVEDI epitomizes what had been done in the field of exploration, excavation, conservation and interpretation of monuments ranging over a period of nearly 2,500 years, and discovered in the present State of Madhya Bharat since 1830. A laborious task has been well done and intelligently presented. In the main text, the monuments are mentioned alphabetically, but in Appendix I these are re-arranged according to their affinity, while Appendix II, groups the same material district-wise.

We should have similar bibliographies for other States as well and if Dr. TRIVEDI can prepare a similar bibliography of either the U.P., Rajputana, Gujarat, or M.P., it would be most welcome.

It is to be earnestly hoped that not only scholars, but the Government of Madhya Bharat as well as the Government of India will utilize this bibliography while selecting monuments for conservation, but also in renewing district surveys for locating hitherto unknown monuments, in which the State abounds. After a brilliant beginning under CUNNINGHAM, later some work of exploration and excavation was done by BANERJI, BHANDARKAR and GARDE. Even this little work was stopped. But the State is exceptionally rich, not only in the monuments of the early historic, mediæval, and Muslim periods, but even in those of the pre- and proto-historic periods, as the recent work at Maheshwar has shown. In fact, planned surveys, followed up by excavation of a few important sites, in Madhya Bharat will enable us to understand the beginnings and growth of civilisation in India. For here are found vestiges, almost untouched, of all the periods. Only they remain to be explored, and systematically linked together.

H. D. SANKALIA

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4. See *Annual Report Arch. Deptt. Baroda* for 1938 (Baroda 1939) pl. VIIa. and M. R. MAJUMDAR, " Rare Sculpture from Kotyarka " *JUB.*, Vol. X (NS) 1941, Part 2, p. 114, fig. 2-31; Inamdar, P. A. *Some Ancient Remains of Idar State* (*Idar Saṁsthānanā Keṭalāk Purātan Avaśeṣo*) in Gujarati (Himatnagar, 1937), pls I-II.

Trees in Sanskrit Literature (Sanskrita Sahityama Vanaspati). By Shri Bapalal G. Vaidya, Sheth Bholabhai Jesingbhai Adhyāpan-Saṁshodhan Vidyābhavan, Saṁshodhan Granthamālā, No. 42. Gujarat Vidyasabha, Ahmedabad, 1953.

Shri Bapalal Vaidya is an eminent Ayurvedic physician in Gujarat, and one of those rare ones, who is also interested in research, in the field of medicine, and diseases. He has tried to show in several of his articles, the good points of Ayurvedic system, and its application to modern life. In this work, he has listed over 200 trees, including flowers and fruits from Sanskrit literature. It is not a soulless collection of material. Shri Vaidya has chosen and even quoted a number of references with a great warmth of feeling, and also commented on the usefulness or otherwise of a number of trees, flowers and fruits. So it makes a very interesting and profitable reading. Its usefulness could be further enhanced if the study is made more exhaustive as to include other literature as well, besides the works of Kalidasa, Bhavabhuti, Magha and other poets, and presented in a historical way.

H. D. Sankalia

श्रीरामामृत तरंग, रामापण्डितकृत, तञ्जावर सरस्वती महाल ग्रंथमाला पुष्प ४९. Edited by G. Nagaraja Rao and Published by Shri S. Gopalan B.A., B.L., 1952. Price Rs. 3/8.

Forty years ago Shri Shankarrao Dev of Dhulia, the veteran research scholar of the Ramadasi cult and literature, published a preliminary account of the manuscripts in the Sarasvati Mahal Library at Tanjore, in the Annual of the Bhārata Itihāsa Saṁśodhaka Maṇḍala. Therein he had mentioned the manuscript of *Rāmāmṛta taraṅga*, a Marathi work on Vedānta in Ovī metre by Mādhava Kumār and this work is now published in the Tanjore Sarasvati Mahal series as its 49th publication. Rāmā paṇḍita, the author of this work, lived in the middle of the 18th century as a court poet of Maharaja Pratapasiṁha of the Tanjore Maratha dynasty. The author's grandmother Umā is stated to have been the daughter of Shri Ekanātha, the Maratha poet-saint of Paithan who died in 1609. This seems rather unbelievable, as we have to imagine two generations in about 150 years—a very long stretch of time to be accepted as the life period of two persons. Mādhava Swāmī, the father of Rāmāpaṇḍita, is given as a contemporary of Maharaja Shahaji II, whose reign stretched from 1684 to 1711. As he is given as a pupil of Rāghavadāsaswami who is stated to be a disciple of Rāmadāsaswāmī, Mādhava Swāmī himself cannot be taken as a contemporary of Rāmadāsa, which means that he could not have been a grandson of Ekanātha who had died a hundred years earlier. The life period of Rāmāpaṇḍita is nowhere given in the short Introduction by the editor discussing the historical background. But as he is stated to have been the

court poet of Pratāpasimha who ruled from 1741 to 1764, he must have been a middle-aged man at that time. This fact also goes against the statement of his being the great-grandson of Ekanātha. There seems to have been some discrepancy in the traditional account handed down by the family and made use of by the editor. We have drawn pointed attention to this fact, at the very beginning of our review, to show the atmosphere which seems to prevail in the Tanjore Maratha community at present. Faith still reigns there in all its mediæval fervour, but modern research seems to have lagged far behind in the race.

But for such intense faith in the works of Saints, such a work as the Rāmāmṛta-taraṅga would not have seen the light of day. The work itself is comparatively a commonplace writing, suitable to the atmosphere of the Bhakti cult. The author has tried to arrange its fifteen *taraṅgas* so as to prove the final establishment of Rāmanāma as the most efficacious remedy for a devotee living amidst the sinful propensities of the Kali age. From the Sanskrit verses inserted at intervals in the Marathi Text of the work, the author appears to have been a well-read man in Sanskrit literature in its various branches. But his attitude seems to have been that of a Purāṇika and not that of a devotee of the Bhakti cult as such, much less that of the cult of the Saints of Pandharpur.

The work is written in good, expressive Marathi verses with an abundance of similies and figures of speech. It is a compact systematic exposition of Advaita Vedānta in a popular style. From the report of its popularity in the Tanjore locality, it seems to have supplied the Maratha community there with a good text of Vedānta for daily use. But there is nothing in it which can compare the exposition with such well-known saints as Shri Rāmadāsa, Ekanāth or Jñāneśvara. Its main use now will be from the point of view of language, as it illustrates the Marathi of the Tanjore region in the 18th century. It illustrates the expression of thought by an offshoot of the main stem of the Marathi language in pre-British days. As with the passing of time and the growth of modern English education, the Tanjore Maratha community was overwhelmed by the surrounding Tamil language and surcharged with Western thought, the tradition of writing in Marathi seems to have been almost forgotten, with the result that the local community had to fall back upon the re-reading of old writings to keep its home tongue alive. Naturally their valuation of their heritage, separated as it is by many generations of Marathi writing in Maharashtra proper, is likely to be an exaggeration of its proper value. Still we sympathise with their natural pride in the local literature and appreciate its worth as a part of the Marathi literature of the 18th century. When we find certain words, idioms and forms of expression of the past age reproduced in a living form in a different environment, we feel a delight in reading which is inexpressible. The work should be useful for workers in Marathi lexicon and writers of the history of the Marathi language. The work reflects the social atmosphere in which the Maratha community was living and their line of thought which is slightly different

from that of the main current in Maharashtra. The rich, alluvial soil of Tanjore seems to have mellowed down the harshness from the expression of the Tanjore Maratha community when compared with that of Maharashtra. The community became, on account of easy economic circumstances, more cultured, more civil and seems to have completely shed off the original crudeness and rudeness going with the Maratha character. The result was that they became intellectually higher, but lost something of the Maratha strength. Tanjore became a noted place for patronage of literature, art and music, but could not keep its independence. Still it is delightful and pride-swelling for a Maratha to find this community cherishing Shivaji and Rāmdās—not to say Jñānadev, Nāmdev and Ekanāth.

Finally, we congratulate the Committee connected with the publication of the Marathi works in the Sarasvati Mahal Collection, for their zeal in bringing out this work in a good form and look forward to further fruits from the same source.

T. S. Shejwalkar.

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